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ABSTRACT

A report of The Brown Project, which concerns coeducation at colleges in the late 1970s, is presented. Section one contains five working papers on various aspects of the undergraduate experience, based on the work of the research team representing six institutions. Topics concern: academic and intellectual development and sex differences; faculty-student interaction and student perceptions of faculty support and involvement; relatedness and autonomy; future plans of men and women and possible contributing factors; and women's self-concepts. Section two concerns the Brown University merger with Pembroke college in terms of student characteristics before and after the merger, and student views of their institution and themselves in 1961, 1967, and 1974. In section three, papers from the conference "Women/Men/College: The Educational Implication of Sex Roles in Transition (December, 1977) are presented. They concern: the ways in which institutions respond to women and men; the issue of policy change in colleges and universities; and the complexity of sex roles in transition. The fourth section contains a final statement of the Corporation Committee on the Status of Women at Brown University. Through its subgroups concentrating on special aspects of the study, the Committee summarized its reactions and prepared recommendations for consideration by the Corporation and the University at large. The survey methodology used by the research team is described in the appendix. References are included. (SW)

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MEN AND WOMEN LEARNING TOGETHER:

A STUDY OF COLLEGE STUDENTS IN THE LATE 70'S

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Report of *The Brown Project*

Brown University

April, 1980

HE 013 523

MEN AND WOMEN LEARNING TOGETHER:
A STUDY OF COLLEGE STUDENTS IN THE LATE 70'S

Report of The Brown Project
Brown University
April, 1980

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PREFACE

The Brown Project, Men and Women Learning Together, provided an unusual experience and opportunity for all of us associated with it. First, its origins were unusual. A board of trustees, in this case the Brown University Corporation, initiated an assessment of one of their own decisions -- the merger of Brown and Pembroke Colleges in 1971. The project brought together a committee of those trustees, policy administrators within the University, and a team of researchers with special interests in higher education and development psychology. It also offered the special perspective of the supporting foundations with their concern for outcomes that have wide applicability for various clienteles and institutions. Finally, the project enabled a collaboration among a group of colleges and universities which share similarities such as distinguished faculties, selective admissions criteria, and orientations toward preparation for advanced and professional study, but also have important differences in environment, backgrounds of students and even geography.

The study began as a reflection on a specific past action with a special focus on the situation of women in a coeducational institution. As planning evolved, it became clear that much benefit could be derived from taking a broader and more futuristic view. Thus we saw the study as a way to understand possible differences in the college experiences of men as well as women and to draw some educational implications from our analyses. Our hope was that in the decade of the 1980's, we might help colleges and universities provide educational opportunities sensitive to the needs of all students and especially adapted to significant social and cultural changes. We conceived the project in three phases: (1) data collection and analyses, (2) discussion/conference, and (3) dissemination/reporting.

Our primary data base included a survey of over three thousand undergraduates, classes of 1978-81 who attended six institutions: Barnard College, Brown University, Dartmouth College, Princeton University, the State University of New York at Stony Brook, and Wellesley College. At Brown we also assembled some longitudinal background data profiling student characteristics, interests, activities, and achievements beginning with the class of 1961. In addition, we conducted a limited number of interviews with current students to provide greater depth for the survey data, and we collected information from Brown/Pembroke alumni/alumnae in three classes.

The discussion/conference phase involved policy makers from other institutions in the Northeast who shared some of the special concerns we were addressing. The conference was scheduled prior to the end of the project so that the research team could present preliminary findings and incorporate the discussion questions into their final working papers. In addition to the conference itself, this phase allowed informal discussions among the representatives of the participating study institutions, and continuous interaction between the Brown Corporation Committee and the research and project staffs. We were constrained, realistically but regrettably, by the limitations of time and resources and were, therefore, unable to enlarge our sample or to extend our focus to faculty and administrative actions and reactions. Nor were we able to employ other methodologies which might further explain some of the patterns identified. We hope such deficiencies will challenge researchers to continue and improve these efforts in addition to others they may already be pursuing.

The Report, our dissemination vehicle, is in four sections. First are five working papers done by the research team on various aspects of the undergraduate experience. Elaine El-Khawas begins with a discussion of academic and intellectual development which focuses on sex differences. Lois Monteiro assesses faculty-student interaction and student perceptions of faculty support and involvement. Relatedness and autonomy form the bases for the analysis by Helen Astin and Laura Kent. My own paper deals with the future plans of men and women and the possible factors which shape their decisions. As a final offering, Joseph Katz integrates findings in all the above dimensions in his discussions of women's self-concepts. An appendix at the end of this section elaborates the survey methodology.

In the second section we offer two analyses specific to Brown. The first, by Kathryn Dion and Rodney Hartnett, examines student characteristics for men and women prior to the Brown-Pembroke merger and for several years immediately following to observe changes over time and to see whether the merger affected particular trends. Francine Deutsch and I have described the classes of 1961, 1967, and 1974 as they present their views of their institution and themselves, now and while they were at Brown or Pembroke.

The conference, Women/Men/College: The Educational Implication of Sex Roles in Transition (December, 1977) benefited greatly from the perspective of three professionals who have been deeply involved with policy issues over the past two decades and have witnessed both the impact of social changes and institutional reactions to them. Their papers form a third part of our report.

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David Truman considers the ways in which institutions respond to women and men. Rosemary Park addresses the issue of policy change in colleges and universities, and Constantina Safilios-Rothschild discusses the complexity of sex roles in transition.

The last section of the Report is devoted to a final statement of the Corporation Committee on the Status of Women at Brown. Through its subgroups which concentrated on special aspects of the study, the Committee has summarized its reactions and prepared recommendations for consideration by the Corporation and the University at large.

Throughout this project we had the guidance and encouragement of the Corporation Committee. They gave generously of their time, energies, and wisdom. Their chairman, Jean Howard, a scholar in Elizabethan English, adapted quickly to social science language and methods and became a respected colleague. We are grateful to the representatives of the participating institutions who joined us in planning study emphases, conference proceedings, and facilitated the collection of data on their campuses. Barbara Lazarus from Wellesley, Richard Spies from Princeton, and Sherry Penney from Yale formed the original Steering Committee. (Yale University did not participate in the study itself since its own undergraduate research was underway.) They were joined later by Barbara Schmitter from Barnard, Marilyn Baldwin from Dartmouth, and Joseph Katz from Stony Brook.

Our research team -- Helen Astin, Elaine El-Khawas, Rodney Hartnett, and Joseph Katz -- extended themselves far beyond usual expectations for project advisors. Their expertise and extensive experience were the key to accomplishing too many things in too short a time. They overcame geographical more research, especially longitudinal studies. We only hope that what is stated, speculated or suggested here will enable trustees, administrators, faculty members, and others who care about education to consider their purposes and priorities, perhaps at times to change their approaches, and to recognize the wisdom of looking back to see from where they have come, but always forward to where they hope to go.

Carole Leland
Project Director
State College, Pennsylvania
March, 1980

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SECTION I

THE UNDERGRADUATE YEARS

SEX DIFFERENCES IN ACADEMIC DEVELOPMENT DURING COLLEGE

Elaine H. El-Khawas

One of the central purposes of undergraduate education is to further the intellectual development of students. Despite much variation across colleges, all institutions design their course offerings, degree requirements, and performance standards with the expectation that students will improve such abilities as thinking analytically, evaluating alternative courses of actions, and formulating new ideas effectively as a result of their college experience. Other purposes are often pursued, including development of specialized skills, but intellectual development remains a central part of the educational process.

It is thus somewhat surprising that this study counts among a relatively small number of studies that directly examine intellectual development among students. Educators have relied, for the most part, on conventional wisdom and established practices in shaping curricular approaches or in setting policy on grading, admissions, or selection of faculty. Many questions remain unanswered about the extent to which students increase their intellectual skills during the college years and how (or how well) colleges assist and direct that process.

The broad questions that prompted this study relate to possible differences in the educational experiences of young women and men attending college today. What are the best ways of educating young women in this

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Elaine H. El-Khawas is Director of the Office on Self-Regulation, American Council on Education and a member of the Research Advisory Team for the Coeducation Study.

period of changing sex roles and expectations? Are there certain experiences that are especially important for their academic and intellectual growth? And how do women's experiences compare to those occurring for undergraduate men? Are there experiences that may appear to be "sex-neutral" but that, in fact, have a negative impact on women? Indeed, what is a good environment for women, one that would promote full development of their academic and intellectual skills?

These are important questions, undoubtedly subject to differences in individual student interests and not entirely translatable into precise and limited research questions. Nevertheless, certain general patterns and broad influences can be identified and should be of value to college and university leaders who are responsible for setting educational policy. The colleges in this study provide a particularly valuable focus for such research: they offer their students an environment that should foster much intellectual growth, including a highly capable and talented faculty, distinguished programs and motivating and achieving peers. But these are resources; what are their actual effects on students?

The question is examined in some detail in this paper, based on data for all women (2076) and men (1271) students who completed an undergraduate questionnaire. Comparisons are made between women and men students (aggregate data) and among students at Brown University, at two women's colleges, and at three other coed institutions. This analysis focuses especially on two important indicators of academic development: the grades students obtain, and their own sense of confidence that they are well-prepared for graduate study. Both have much bearing on the future success of these students. Grades are important not only because they offer a major criterion by which graduate schools select students, but also because they offer students a continuing, "objective" point of comparison between their own achievements and those of other students. Having confidence about being prepared for graduate study is probably as important as grades for this group of students; more than nine out of ten are planning to go on for graduate study. Over half hope to complete doctoral-level studies.

Results are reported in three sections: first, an overview summarizes broad differences in the academic experiences of women and men undergraduates, with differences by major field and by type of college noted briefly; second, certain aspects of the academic setting -- curricular approaches, types of faculty influence and peer climates -- are examined for their effects on grades and on academic self-confidence. Factors that appear to contribute to academic developement will be identified and elaborated. Third, possible implications of the study's findings are discussed, with particular emphasis on differing academic environments.

I. OVERVIEW: PATTERNS OF ACADEMIC DEVELOPMENT

Grade Averages

Generally speaking, the women and men in this study do very well in college. More than half earn grades of B+ or better, two-thirds or more report that they have gained competency on a variety of intellectual skills, and relatively few fail a course or withdraw from college.

It is important to recognize, however, that students themselves may not take such a positive view of their achievements. Regarding their college grade averages, for example, the pertinent comparison for the women and men in this study may be their high school averages. If so, it seems evident that a good many students face disappointment. In high school, the great majority had maintained a very high average, usually of A or A-. In college, only about one-quarter of them were earning such averages. The others generally fell to B averages that would be considered low by their high school standards (Table 1).

This drop in academic standing occurs for all college students to some extent, of course, but the decline is much greater at the institutions in this study. Comparable figures from national studies of college students suggest that only a modest decrease takes place: in 1968, 28% of all entering college freshmen had high school averages of B+ or better; a similar proportion -- 17% -- reported college averages of B+ or better.*

It is distressing to note, however, that women students in the present study are more likely than men to face this "deflation" in their grade averages. Two factors contributed to this decrease in grades for women: first, more women than men enter college with strong high school records; then, at college, fewer women earn high grades.

Freshman year is the time of greatest adjustment in this regard. As Figure 1 shows, the proportion of women earning averages of A- or better drops 57% between high school and college. This overall pattern generally follows for each individual college in the study (Table 2).

The discrepancy between the sexes on college grade averages does not, however, appear to be uniform across fields of study. The gap between women

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*Royer, J. T., and Creager, J.A., A Profile of 1968 College Freshmen in 1972, ACE Research Reports, Vol. 10, No. 1 (Washington: American Council of Education, 1976).

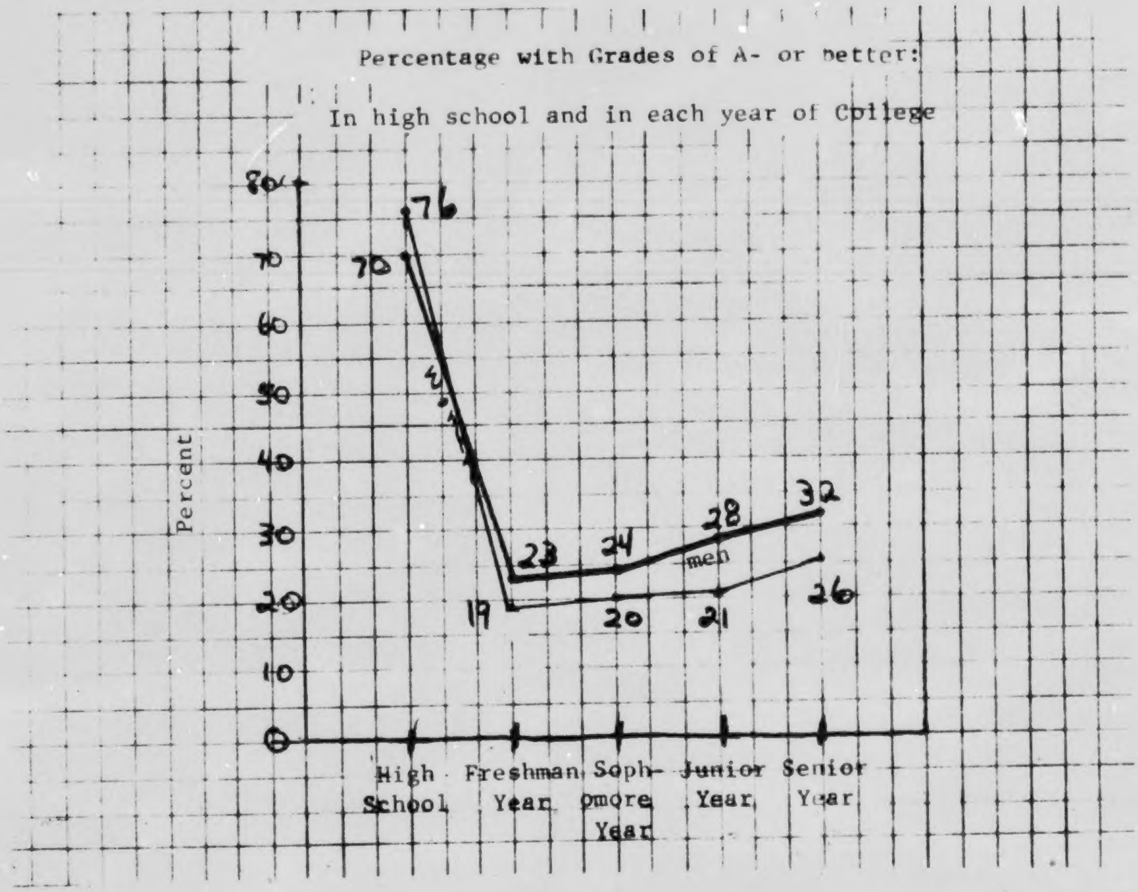

Figure 1

and men is relatively minor in such fields as history, languages and literature; in contrast, considerable differences between the sexes appear in three fields: biological/medical sciences, physical sciences, and engineering.* These fields have the highest proportions of students (both women and men) who have strong high school averages (see Table 3); yet, college averages in each of these fields are lower for women than for men. In biological sciences, for example, 34% of men reported college averages of A- or better, compared to 19% for women. This is the case despite the fact that more women than men in this major had high school averages of A- or better (81% versus 75%).

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*These fields account for 11%, 9%, and 8%, respectively, of women undergraduates in this study.

Similar discrepancies between the college averages of women and men students appear in the physical sciences (21% of women with A- or better versus 29% of men) and in engineering (22% of women with A- or better versus 27% of men). This gap between women and men in three very demanding science fields warrants further examination beyond the scope of the present analysis. Differences by class year might be assessed, as well as differences in the skills or experiences that women and men in these fields bring with them to college. Differences in grading patterns of individual colleges should also be considered.

Academic Self-Esteem

While grades provide a conventional indicator of academic progress among students, this study also offers information on the academic and intellectual growth that is presumably a large factor in the grades a student earns. Students reported specific competencies on which they felt improved ability, rated various aspects of instruction as contributors to their academic growth, and indicated whether, as a result of their college experience, they felt they were well prepared for graduate or professional studies.

As Table 4 shows, students generally feel that they are getting a good deal out of their education. With minor differences, 70% or more of both women and men felt they had increased their ability in ten of the thirteen competencies listed. More than half felt they had gained confidence about their ability to do graduate work.

There is broad agreement between women and men on the skills that have been improved. Four skills got very high ratings (i.e., 80% or better) by both women and men:

- learning to organize and present ideas
- learning to evaluate options and make informed choices
- ability to acquire new skills on one's own initiative
- appreciation and understanding of ethnic and cultural diversity

Seven other skills fell into a middle rank, again with only minor differences between men and women. These are the following:

- ability to write well
- ability to speak effectively
- ability to negotiate compromises
- ability to complete a task
- ability to formulate original and creative ideas
- ability to work with others, of the same sex
- ability to work with others, of the opposite sex

Two skills received relatively low ratings (40-65%): compared to other competencies, fewer students felt that they had improved their abilities to demonstrate leadership and to use sophisticated quantitative tools (programming, statistics, etc.).

It is only on the latter skill -- the ability to use quantitative tools -- that substantial differences appear between men and women. While 61% of the men reported gains, only 44% of the women did so. This provides evidence once again of the important discrepancy between the sexes in exposure to and familiarity with mathematical and quantitative skills that has been discussed by Lucy Sells, Sheila Tobias, and others. Notably, there are some differences across colleges in this area (Table A2).

An important discrepancy also appears regarding student response on a measure of intellectual self-confidence. Men are more likely than women (63% versus 52%) to express confidence that they are well-prepared for graduate study. This discrepancy between women and men holds across almost all major fields (arts/media is the only exception), class years, and colleges (Table 5). It also holds when women and men are matched on grade average and graduate plans.

Some differences by college year should be noted. While women's self-assessments trail behind men each year, the discrepancy is greatest during freshman year, narrows somewhat during sophomore year, but widens again in junior and senior years. As with the findings for grades, freshman year apparently marks a low point for women: only 29% felt they had gained confidence in their ability to handle graduate work. A single year's experience is limited, of course, and might not be expected to produce much self-confidence. The contrast with responses by men students is considerable, however: as many as 42% of male freshmen felt they had already gained confidence about graduate school.

In the following section, closer attention will be given to this discrepancy between women and men students, particularly to test whether certain aspects of instruction, teaching approach, or of peer climate are associated with greater self-confidence among women with regard to their preparation for graduate school. Higher-than-average levels of self-confidence are reported by women majoring in engineering, social and behavioral sciences, history and civilization, and English literature and languages. The fiels with lower-than-average responses include arts and media, as well as the two science fields -- physical sciences and biological sciences.

In taking a closer look at factors that may be associated with this discrepancy between women and men, the general fact of academic success is not being belittled. The young women and men in this study are highly achieving in college, probably more so than students at many other colleges.* The concern is whether students gain all that they are able to on important aspects of undergraduate education and, wherever possible, to identify factors that may contribute to their academic growth.

II. FACTORS RELATED TO ACADEMIC DEVELOPMENT

As the previous section has shown, women and men students enrolled at the colleges in this study do have much to be satisfied with in their education. But it is obvious, too, that women do not feel they do as well as men on several important indicators of academic development. Despite better averages in high school, they earn lower averages than men while in college. Despite similar experiences in improving specific competencies, fewer women than men have gained confidence that they are well-prepared for graduate work. These are quite summary indicators, of course, and it is possible that the discrepancies that appear between women and men can be explained by differences in personal interests, values, or decisions about how to spend one's energies as an undergraduate. It is a broad pattern, however, summarizing the experiences of over two thousand women and a thousand men at six highly competitive undergraduate institutions. Both women and men at these colleges are motivated and achieving, and have set their sights on ambitious academic and career goals. The discrepancy between women and men on these two key indicators is therefore worthy of close attention.

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*In a recent survey of member colleges by the Associated Colleges of the Midwest, 1975 graduates were asked whether their colleges had been effective in developing their abilities on various academic competencies. Positive responses were given by about 40-60% of students, compared to the general pattern for students in the present study of about 70% or better. (Table 6.)

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It is evident, moreover, that career and educational plans are still tentative for undergraduates. About 40% of students in this study, for instance, reported that they had changed their career plans over the course of the last year. National surveys have shown that, over a four year period, the majority of students make changes in their choice of major and career field. Much of the indecision, at least in this study, undoubtedly hinges on students' own estimates of their chances of getting accepted into graduate schools.

It is in this context that grade averages in college act as important reference points for students. Self-confidence about being well-prepared for graduate school is also important. It is likely that lower grades or lack of reinforcement about one's ability to handle graduate work contributes to downward adjustments by students in their tentative educational and career plans. Thus, for instance, the data in this study do show that, compared to those students with A or A- averages, students with B averages (still quite respectable by national standards) are less likely to be aiming for doctoral work and, in fact, are more likely to say that they will put off graduate school for a year or more, rather than going on immediately after receiving the baccalaureate. Similarly, those students who felt that they had not gained confidence are more likely to aim for master's level work (rather than doctoral studies) and are more likely to say they will put off graduate study.

This is the "frog pond" effect -- well-documented in research by Davis, Astin and others -- that must be a special concern of highly selective colleges. An able student might have enrolled at a less selective college and gained in self-esteem by being a high achiever on that campus; the same student does not fare as well -- on self-esteem -- in the bigger and more competitive "pond" of a highly selective college. It is unfortunate, however, that such students are not able to adjust for such environmental differences, and instead lower their expectations. Further, as evidenced in this study, they actually back off from the prospects of continued academic pressures. Their decisions to put off graduate study or limit their goals to master's-level study may have life-long consequences for their careers and later achievements.

In this section, factors related to increased self-confidence and to achieving high college-grade-averages will be examined in some detail. The basic analysis procedure is to look at students who gained confidence and those who did not to see what differences appear in their college experiences. Similarly, students with high averages (A or A-) are compared to students with averages of B or less to see whether any consistent differences can be identified in their curricular experiences or in faculty and peer influences.

A note of caution is in order. Studies of college effects ideally should be longitudinal, i.e., following one set of college students through their four year period of study. Because this study is not longitudinal but instead is based on experiences reported by enrolled students at one point in time, the study's results are necessarily tentative. It is nevertheless fair to say, perhaps, that distinctive patterns and sizeable effects identified in the analysis are worthy of closer attention. On the basis of trends identified regarding the positive relationships between academic development and certain curricular approaches, for instance, it may be appropriate for college officials to undertake more detailed study of student experiences with those particular approaches.

Contributors to Academic Growth: The Student View

Before presenting results of the analysis regarding college experiences related to academic development, it is possible to review student perceptions on the same question. In the study questionnaire, students were asked to rate how much each of fifteen aspects of college had "contributed to their academic growth." Table 7, which summarizes the results, shows once again the major importance of one's peers in influencing undergraduate experiences. In choosing among items covering coursework, campus activities, faculty influences and peer influences, students clearly attribute a major role to peer conversations.

These students also give relatively high marks to coursework, particularly the efforts involved in preparing course papers. In comparison, experiences with campus activities, discussions with faculty or residence hall advisors, honors work, and independent study get relatively modest ratings. Generally speaking, women and men assign similar rank order to each type of college experience, although consistently fewer men than women termed any particular experience as "very valuable."

Some differences appear across schools, especially in ratings of peer and faculty influence and in some aspects of coursework (Appendix Table A3). It is on the contribution of conversations with peers of the opposite sex that women at coed colleges and at single-sex colleges differ the most. Women at single-sex colleges were less likely than other women to say that such conversations were valuable.

The impact of conversations with other women also varied among colleges. For women students, 59% said that conversations with other women had been very valuable to their academic growth. Although it might have been expected that such conversations are more important at single-sex colleges, this did not prove to be the case. Women students at single-sex colleges did not assign higher-than-average ratings to such conversations.

Effects of Specific Competencies

As already reported, most students felt that they had improved in each of the competencies on which they were questioned. Because agreement varied between 44% and 85% of students, however, it is of interest to assess whether certain of these skills contributed more than others to student confidence about their preparation for graduate school.

Table 8, which summarizes the results, shows this to be the case. Increased abilities in three areas seem especially important to increased intellectual self-confidence:

- improved ability to organize and present ideas
- improved ability to write well
- improved ability to speak effectively

Students perceptions that they had improved their ability to organize and present ideas emerge as a very important contributor to self-confidence for both women and men students. There are only slight differences among the schools.

Opportunities to demonstrate leadership also make a significant contribution to academic growth for women and men students. This is especially interesting because of the fact that not all students reported such experiences (about 60%, overall) and in view of the lack of explicit attention typically paid to such experiences in the undergraduate curriculum. Further analysis would be necessary to determine the particular types of experiences that are being thought of by students here, but it is important, nevertheless, to note the importance of such leadership experiences to intellectual self-confidence among students.

There are some important *differences between women and men students.* For women more than men, for instance, improved ability to learn new skills on one's own initiative was a major contributor to self-confidence. Notably, men reported the experience about as often as women (81% versus 84%), but growth in this skill was apparently more important to self-esteem for women than for men students.

In contrast, growth in two areas -- using quantitative tools and evaluating options or making informed choices -- contributed to intellectual self-confidence among men to a greater degree than among women. These findings on the importance of quantitative skills -- not only in terms of actual exposure to such experiences but also on differences between women and men in the way that such experiences contribute to academic self-esteem -- offer new reinforcement for commentaries about the way women are hampered by lack of exposure to mathematics and quantitative reasoning.

Competency in evaluating options and making informed choices is another important skill related to decision-making and analytical capabilities -- vital to most professional career fields. The discrepancy between women and men is consequently quite important on this skill, too. Notably, women are as likely as men to report some gain in this ability (85% do so); the difference, however, is that the improved ability does not translate into increased intellectual self-esteem for women as much as it does for men students. Are there differences in specific learning experiences? Do women increase these skills more often as part of coursework, while men increase such skills in out-of-class experiences as working with a professor or, perhaps, by different choices about summer jobs? Because the skill is an important one, further attention to differences in the experiences of women and men may provide valuable insights on the process of academic development.

Effects of Curricular Options

Opportunities for tailoring coursework to individual interest can be very important to many students. Indeed, Brown's new curriculum was often mentioned by students, in the interview phase of the study, as a major reason for choosing Brown or for being satisfied with their studies. Options for independent study, off-campus internships, and for course-related field work are examined here, looking for differences between women and men students and to possible effects of such course options on the self-esteem and grade averages of students. The influence of taking courses with specific coverage on women is also examined. Findings are summarized separately for each option (Table 9).

Independent Study: Only about one-fourth of students reported that they had taken independent study courses. The analysis also shows that independent study is related to increased academic self-esteem, and, to a lesser extent, to better grades (Table 9). The pattern is generally the same for women and men, and across comparison colleges.

Off-campus internships: Internship experiences present a similar pattern: students who report such experiences are more likely than others to express self-confidence about graduate school and to have earned grade averages of A- or better. It should be noted, however, that only 19% of women and 8% of men had internship experiences.

Course-related field work: About one in four students had taken courses that included a fieldwork component. This experience is related to self-confidence and better grades, but only weakly. The relationship is slightly stronger for women than for men, with no significant differences across colleges.

Courses with specific coverage on women: There are sizeable differences in whether or not students had taken courses that included lectures or other specialized coverage on women. Just over 40% of women had done so, compared to 24% of men students.

Surprisingly, such coursework does not appear to be related to academic self-confidence or to grade averages. Students are about as likely to express self-confidence or to have earned good grades with or without having taken such courses.

In sum, it appears that two curricular options, independent study and off-campus internships, facilitate academic development among students, with few differences between women and men. In comparison, field work and courses with special coverage on women do not appear to have major effects on academic self-esteem or grades. A caveat must be offered, however, regarding independent study and internships. It is possible that the relationship observed here is explainable simply by the fact that it is the more self-confident students who seek out and make use of these options. A cross-sectional study such as this one cannot effectively sort out the difference, but it would bear further clarification.

Effects of Faculty Influence

Many studies have documented the important role that the college's teaching faculty play in directly and assisting the academic development of students. Too often, however, little systematic attention has been given to different aspects of what faculty do to influence student development. Such concepts as mentoring, role modeling, and sponsorship have been widely discussed; each needs more careful analysis.

This study affords an unusually rich opportunity for assessing student perceptions of faculty influence. A number of questions were directed to this topic, so that at least four different dimensions of faculty influence can be examined. These include:

- aspects of good instruction, i.e., teaching important skills, demanding quality work, helping students integrate the various aspects of a subject;
- general faculty supportiveness, as evidenced by ratings that faculty offer helpful advice, take a special interest in students, or offer positive acknowledgement for students' ideas;
- personal contacts and faculty assistance, including discussions about the student's career plans and discussions about academic matters; and
- apprentice experiences, i.e., the effects of direct contacts with faculty through research, laboratory, or teaching assistantships, or through other employment by a faculty member.

Findings on each aspect of faculty influence are summarized separately (Table 10).

Instructional Style: Students were asked to assess their professors on a number of different characteristics. Generally speaking, faculty got good marks, particularly on the three items related to instructional quality. Thus, about 70% of students (both women and men) reported that most of their professors demanded high quality work from them. About a third of students felt that most faculty taught them important skills, and another third said that about twenty-five percent of their professors did so. Only about 20% of students would credit professors with helping them to integrate aspects of a course, however, although another 40% felt that at least 25% of their professors did so.

Two of these measures -- helping students integrate aspects of a course and teaching important skills -- are associated with gains in self-confidence among students. On both, students who felt that half or more of their professors had been helpful were much more likely to express confidence about their graduate school preparation. In contrast, there was little gain associated with faculty behaviors to demand quality work from students; such behavior apparently was noticed, perhaps expected, but was not influential in itself.

A similar but weaker pattern exists with regard to grades. For both women and men, students who report that most of their professors taught them important skills or helped them integrate aspects of the course were more likely than other students to have grades of A- or better.

Faculty Supportiveness: Each of the three measures of faculty support are related to increased self-confidence among students, and, to a lesser extent, to good grades. This pattern holds for both women and men and across colleges. Some specific differences appear across colleges, however; for example, the relationship between helpful advice and self-confidence is weaker for women at Brown than for other women. Generally, there are too few students in each subcategory for reliable comparisons among colleges, but the trends here suggest possible benefits of more studies of this aspect of undergraduate education.

Personal contacts and assistance: In addition to their instructional styles, faculty can contribute to student self-esteem through informal discussions about academic or other matters and help with career decisions. Notably, only a small proportion of students report such experiences. Forty percent or fewer felt that discussions with faculty had contributed to their academic growth. One-fourth or fewer reported that professors had been influential in their career decisions.

Yet, these experiences are important contributors to academic self-esteem. On all of these measures, women and men students are more likely to express self-confidence about graduate school if they could report that discussions with faculty were valuable. It should be noted, too, that the relationship between such faculty contact and self-confidence is stronger for women than for men.

Together, these findings underscore the special significance that faculty contact has for women. Such personal contacts may offer both the specific experiences and the moral support that reinforce women's aspirations. Men, in contrast, may benefit somewhat less from faculty contact in this regard because of the greater support they receive for their ambitions from families and from society in general.

Apprenticeship Experiences: Students have a special kind of contact with faculty when they work for them on research projects or other professional activities. The questionnaire includes two items that tap this type of experience: First, whether the student was a laboratory, teaching, or research assistant; and secondly, whether the student was employed by a faculty member. The analysis shows that both are importantly related to increased self-confidence in students and, to a moderate extent, to good grades. This positive effect occurs for both women and men, even though fewer women are able to report such experiences.

To recapitulate briefly, it appears that the data offer positive evidence for several dimensions of faculty influence on student development. The most striking relationship is between faculty influence and increased self-confidence in students, particularly in women students. College administrators may wish to give closer consideration to ways that the college can encourage such faculty contact for undergraduates, particularly in view of the fact that, on most items regarding faculty influence, only a modest proportion of students report the experience.

Effects of Peers

It has long been recognized that a student's generational peers have potent influence on attitudes and behaviors of college students. In this section, some limited aspects of peer influence are examined for possible effects on academic development. The possibly discouraging influence of a competitive academic climate is considered, as are several measures of the extent to which women and men are in classes together, discuss academic matters, and spend time together.

As noted earlier, student perceptions were that their peers were more important than coursework or faculty as contributors to their academic development. Results of this analysis support this view (Table 11). For women and men, the higher the rating given peers, the higher the proportion of students saying that they felt confident about being well-prepared for graduate work. Several comparisons are of interest:

1. Conversations with opposite-sex peers have about the same degree of effect for women and men. Thus, conversations with men students are associated with increased confidence among women, and men benefitted to a similar extent from conversations with women students.
2. Male reliance on each other seems to be evidenced here, as well. Conversations between one male and another have a positive effect on men's self-confidence, and this effect is greater than that which appears for same-sex conversations among women.
3. The importance of peers is underscored by the fact that talks with family members (also viewed favorably by students) are only weakly related to increased self-confidence.

4. Comparisons across colleges are difficult on this topic because of small numbers of students in some categories.

Data were also examined for a relationship between peer influence and grades, possibly indicating that conversations reinforce subject matter covered in courses or majors. This appears not to be the case; students who give different ratings to peer conversations show no differences on grade averages.

Competitive Climate: Fellow students represent competitors too and, by their achievements, can contribute to a lowered sense of academic worth in a student. The data in Table 11 show that student perceptions about whether or not their college was "very competitive" did not affect their self-confidence. However, other data (see page 11) have already shown that students do suffer some loss in self-esteem and even appear to lower their aspirations for further study. Moreover, competitive climate is related to grades: those who see their college as very competitive are less likely to have grade averages of A- or better. This pattern, which holds true for women at Brown particularly, reflects results of other studies that have documented how a student's grades and self-esteem suffer when they are enrolled in a highly selective college. Such colleges may wish to help their students to gain perspective on the impact of a competitive academic environment, through counseling and advisement or through special workshops, as a way to offset this negative influence. Otherwise, it appears that a process of negative impact exists, particularly for women students, that students are not aware of but are affected by in important aspects of their career decision-making.

Proportions of Men and Women in Classes: Because of its multi-institutional nature, this study provides some important comparisons between coed colleges and single-sex colleges. Through a direct question on the survey, students provided information on one particular aspect of a coed or single-sex college, that is, the proportion of same- or opposite-sex students encountered in one's courses. Classroom atmosphere may be affected by differences in the mix of women and men in courses; this, in turn, may affect self-confidence or grade averages of women and men.

Of the women in this study, relatively few (17%) report that their classes have no males enrolled. A good many (42%) attend one or two classes with predominantly female enrollments, however, and a similar proportion (38%) report that their classes have about equal proportions of women and men students. There are, of course, considerable differences across colleges.

Are such differences in sex composition of classes related to self-confidence and grades among women and men? Examination of the survey responses suggests that this may be the case with regard to self-confidence but not with grades. Thus, expressions of self-confidence are significantly higher than average under the following conditions for women:

three or more courses with no males enrolled
one or two courses with no males enrolled
one or two courses with predominantly female enrollment

The first two conditions occur almost entirely at single-sex colleges. The last occurs at all three colleges that were compared.

For men, notably, the proportion expressing self-confidence was higher than average under the following conditions:

one or two courses with no women enrolled
one or two courses with equal proportions of men and women

Comparison for individual colleges are generally not reliable due to small numbers in some categories. The limited evidence here does suggest, however, that differences in classroom climate may be worthy of closer attention.

Other tabulations have shown that the proportion of women students in courses is also related to differences in faculty contact and supportiveness. It is possible, then, that the differences observed are explainable by differences in patterns of faculty-student interaction that emerge when differing proportions of men and women are enrolled in a course. Differences across fields of study may also be part of the explanation.

III. DISCUSSION AND IMPLICATIONS

The review of specific findings amply documents certain general points about the academic development of men and women students. The overall context is one of considerable achievement, certainly: high proportions of students earn good grades and most students feel that they have improved their ability in a large number of competencies that will be important to success in their graduate study as well as to their careers. But there is clear evidence, too, that the experiences of women and men students are different. Despite equally strong high school credentials, women fall behind men students during college in the grade averages they earn and in their sense of confidence about their ability to do graduate work. And even though similar proportions aspire to graduate degrees, women are more likely than men to plan to put off graduate study for a while and to plan on master's degrees instead of doctoral study.

Because of this pattern, whereby women seem to be adjusting their plans downward to a greater extent than are men students, it is important that closer attention be paid to the aspects of college that appear to contribute to the academic development of women and men. This study provides some important clues as to aspects of academic life that may be especially significant. The study has identified a good number of factors that are positively related to academic development; needed now is closer examination of how effective these factors are in specific academic settings.

Figure 2 provides a summary of the research findings on factors found to be significantly associated with academic development. Those factors range from opportunities to improve certain cognitive skills to experiences of working with faculty or of simply sitting around and talking with other students. To a great extent, contributing factors have a similar degree of influence on women and men. There are, however, important sex differences. Thus, for instance, women appear to benefit somewhat more than men from opportunities to demonstrate leadership and from "valuable" discussions with faculty. So too, women benefit to a greater extent than men from having faculty who are supportive, i.e., offering positive acknowledgement for their ideas and showing interest in their work. In comparison, men students to a greater extent than women appear to gain self-confidence from conversations with same-sex peers and from opportunities to improve their ability to evaluate options and make informed choices. Each of these differences deserves closer attention.

Notably, only a limited number of factors had any sizeable effect on the grade averages that students earned. These factors included: taking independent study; receiving good instruction, particularly when faculty help students integrate the various aspects of a course; and, for men only, being employed by a faculty member and gaining skill in the use of quantitative tools.

In contrast, a much wider range of factors has been found to contribute to academic self-esteem. Growth in specific cognitive abilities emerges as very important. This finding offers support to recent efforts by a number of

Figure 2

Summary of Findings:

Factors related to Academic Development

Student Experience	Related to Self-Confidence?		Related to High Grades?	
	Women	Men	Women	Men
Improved ability to:				
Organize and present ideas	+ *	+ *		
Speak effectively	+ *	+ *		
Write well	+ *	+		
Demonstrate leadership	+ *	+		
Acquire new skills on one's own	+ *	+		
Evaluate options and make informed choices	+	+ *		
Formulate original ideas	+	+		
Pursue a task to completion	+	+		
Use quantitative tools	+	+		+
Curricular options:				
Independent study	+ *	+ *	+	+
Off-campus internships	+ *	+ *		+
Course-related fieldwork	+			
Faculty instructional style:				
Teaches important skills	+ *	+		+
Helps integrate aspects of a subject	+	+	+	+
Faculty supportiveness:				
Gives helpful advice	+	+	+	+
Shows a special interest in my work	+	+	+	
Offers positive acknowledgement for my ideas	+	+	+	
Faculty assistance:				
Female professors influenced my career plans	+	+		
Male professors influenced my career plans	+ *	+ *		
Had valuable discussions with female faculty	+ *			
Had valuable discussions with male faculty	+ *	+		
Apprentice experiences:				
Was research, teaching, or laboratory assistant	+	+		+
Employed by a faculty member	+	+		+

Summary of Findings (continued)

Student Experience	Related to Self-Confidence?		Related to High Grades?	
	Women	Men	Women	Men
Effects of Peers:				
Conversations with same-sex peers	+	+ *		
Conversations with peers of the opposite sex	+	+		
Student body seen as very competitive				-
Classes have no males enrolled	+			

Chart includes all factors on which significant differences appeared.
Those marked with an * showed differences of 20 percent or more. All others showed differences of at least 10 percent.

colleges to give new attention to the specific competencies that should be developed as part of an undergraduate curriculum.

Clearly, too, faculty play a major role in helping students to feel confident about their academic ability, not only through certain qualities of teaching style but also through the direct contacts afforded by discussions with students or by student employment on faculty projects. Attention to these latter types of influence seems especially important in view of the fact that relatively few students currently report such experiences.

Options for independent study and for off-campus internships show a strong relationship with increased self-confidence in students and, to a moderate degree, with high grades. Here too, closer attention may be valuable because of the relatively small number of students who can report having taken such options.

What about the impact of a single-sex or a coeducational environment? Some important differences were found across the colleges in this study. Notably, at single-sex colleges, higher than average proportions of women felt they had gained confidence that they were well-prepared for graduate studies. So too, higher than average proportions of women at single-sex colleges planned to go on for doctoral studies and intended to begin graduate work immediately after receiving the baccalaureate. The pattern of differences between single-sex and coeducational colleges is not uniform, however.

The analysis of specific aspects of academic life suggests that differences in the attitudes of faculty toward students and differences in the nature of the curriculum contribute significantly to the patterns of difference that are evident between single-sex and coeducational colleges. It may be useful, then, for individual colleges to assess their own areas of strength and relative weakness in light of the comparative findings offered by this study.

At the same time, it is important that attention be directed toward some trouble spots suggested by the data. The freshman year of college, for instance, appears to be a time of special stress for women students. Their confidence is low and, for most, their grades are down compared to what they had achieved in high school. A number of colleges across the country -- including both large state universities and small, selective private colleges -- have developed special programs focused on the freshman year.

It would also be important to look more closely to the experiences of women students in the physical and biological sciences. Despite strong high school grades, they quickly seem to fall behind the record of men in these fields. Additional data analysis could be prepared on this point and could complement campus-directed reviews of student experiences.

In sum then, the study helps to clarify certain patterns of student experience. It also suggests important directions for closer study of the ways that women and men are differently affected by their educational experiences.

Table 1

High School and College Grades: Total Sample of Women and Men Students

(Percentages)

	Women	Men
High School Average		
A or A+	44%	42%
A-	33	28
B+	17	19
B	5	8
B- or less	2	3
Other, ungraded	0	0
	100%	100%
College Average		
A or A+	5%	8%
A-	16	18
B+	32	26
B	29	25
B- or less	17	21
Other, ungraded	1	1
	100%	100%

Table 2

High School and College Grades: Differences by College

	Percentage with A- or better in high school	Percentage with A- or better in college
WOMEN:		
A1	82%	28%
A2	88%	25%
A3	66%	20%
A4	51%	17%
A5	76%	17%
A6	83%	17%
MEN:		
A1	71%	33%
A2	81%	31%
A4	45%	21%
A6	75%	19%

Table 3

College Grades
By Undergraduate Field of Study

	Women	Men
Percentage with A- or better average in:		
History and civilization	26%	26%
English and languages	22%	22%
Social and behavioral sciences	20%	24%
Engineering and mathematics	22%	27%
Physical sciences	21%	29%
Biological and medical sciences	19%	34%
Arts	25%	21%
Other	14%	31%
Undecided	16%	33%

Table 4

Improved Competencies During College: Total Sample of Women and Men Students

	Women	Men
Percentage who felt they had improved their ability to:		
Speak effectively	75%	77%
Write well	77%	79%
Demonstrate leadership	59%	61%
Appreciate cultural and ethnic diversity	84%	80%
Utilize quantitative tools	44%	64%
Evaluate options and make informed choices	85%	86%
Negotiate compromises	76%	73%
Organize and present ideas	87%	87%
Formulate creative and original ideas	70%	74%
Work comfortably with members of the opposite sex	70%	72%
Work comfortably with members of the same sex	78%	73%
Acquire new skills and understanding on my own	84%	81%
Pursue a task to completion	74%	69%

Table 5

Increased Intellectual Self-Confidence during College: By Sex, By Year, and Major

	Women	Men
Percentage who gained confidence that they are well-prepared for graduate or professional school:	52%	63%
By year:		
Freshman	29%	42%
Sophomore	52%	58%
Junior	61%	71%
Senior	69%	84%
By major field of study:		
History and civilization	55%	68%
English and languages	49%	58%
Social and behavioral sciences	56%	64%
Engineering and mathematics	49%	64%
Physical sciences	52%	62%
Biological and medical sciences	49%	67%
Arts	53%	50%
Other	33%	54%
Undecided	26%	39%

Table 6

Increased Competencies Reported by Graduates of ACM Colleges

	Percentage
Percentage who felt their college was effective in improving their ability to:	
Think analytically	66%
Acquire new skills on my own	61%
Write well	43%
Communicate orally effectively	37%
Formulate creative ideas and solutions	47%
Use sophisticated quantitative tools	20%
Choose between alternative courses of action	43%

Source: "Career Patterns, Employment, and Earnings of Graduates of 11 ACM Colleges," by P. Wishart and J. Rossmann, (Chicago: Associated Colleges of the Midwest, 1977), p. 70.

Table 7

Student Ratings on Various Contributors to Academic Growth: Total Sample of Women and Men Students

	Women	Men
Percentage reporting each of the following was "very valuable" to academic growth:		
Conversations with same-sex peers	59%	42%
Conversations with opposite-sex peers	52%	39%
Talks with family members (including siblings)	50%	36%
Researching and writing course papers	40%	32%
Course lectures	34%	24%
Reading Assignments	33%	27%
Exchange of ideas in the classroom	30%	20%
Experience with campus activities (paper, student government, etc.)	28%	21%
Nonassigned reading (not related to courses)	27%	20%
Discussions with male faculty	21%	16%
Discussions with female faculty	20%	10%
Independent study	18%	16%
Nonassigned reading (related to courses)	13%	9%
Contact with residence hall advisors	9%	7%
Participation in honors work	5%	6%

Table 8

Effects of Gain in Specific Competencies on Increased Self-Confidence of Women and Men

		Women	Men
For each subset of students, percentage who felt confident that they were well-prepared for graduate adn professional school:			
Learned to speak effectively:	Yes	57%	68%
	No	36%	46%
Learned to write well:	Yes	57%	66%
	No	36%	49%
Learned to demonstrate leadership:	Yes	61%	70%
	No	39%	51%
Learned to appreciate ethnic and cultural diversity:	Yes	53%	66%
	No	48%	52%
Learned to use quantitative tools:	Yes	58%	69%
	No	47%	52%
Learned to evaluate options and make informed choices:	Yes	54%	66%
	No	39%	44%
Learned to negotiate compromises:	Yes	54%	67%
	No	46%	51%
Learned to organize and present ideas:	Yes	55%	67%
	No	32%	38%
Learned to formulate creative and original ideas:	Yes	57%	67%
	No	41%	51%
Learned to work comfortably with members of the same sex:	Yes	54%	66%
	No	47%	55%
Learned to work comfortably with members of the opposite sex:	Yes	53%	66%
	No	48%	55%
Learned to acquire new skills on my own initiative:	Yes	55%	66%
	No	33%	49%
Learned to pursue a task to completion:	Yes	56%	68%
	No	41%	53%

Table 9

Effects of Curricular Options On Increased Self-Confidence and Grades: Total Sample of Women and Men Students

		Percent with Self-Confidence		Percent with High Grades	
		Women	Men	Women	Men
Of each subset of students, percentage reporting self-confidence or high grades:					
Took Independent study:	Yes	69%	80%	29%	36%
	No	47%	58%	19%	24%
Had off-campus internships:	Yes	69%	84%	20%	36%
	No	48%	61%	21%	26%
Had course-related field work:	Yes	60%	70%	21%	25%
	No	49%	61%	21%	27%
Had courses with specific coverage on women:	Yes	57%	65%	22%	24%
	No	48%	62%	21%	28%

Table 10

Effects of Faculty Influence On Increased Self-Confidence and Grades: Total Sample of Women and Men Students

		Percent with Self-Confidence		Percent with High Grades	
		Women	Men	Women	Men
Percentage of students reporting self-confidence or high grades:					
Faculty demand high-quality work:	50% or more	54%	65%	26%	27%
	10% or less	49%	52%	16%	26%
Faculty teach important skills:	50% or more	63%	73%	26%	32%
	10% or less	41%	55%	17%	20%
Faculty help integrate various aspects of a course:	50% or more	61%	74%	26%	34%
	10% or less	44%	55%	16%	20%
Faculty offer helpful advice:	50% or more	60%	68%	26%	30%
	10% or less	45%	57%	16%	20%
Faculty take a special interest in students' work:	50% or more	66%	81%	31%	36%
	10% or less	48%	64%	18%	27%
Faculty offer positive acknowledgement for one's ideas:	50% or more	62%	73%	28%	32%
	10% or less	43%	57%	14%	23%
For my academic growth, discussions with female faculty were:	very valuable	61%	62%	21%	31%
	not valuable	38%	62%	21%	30%
For my academic growth, discussions with male faculty were:	very valuable	63%	71%	24%	30%
	not valuable	30%	55%	22%	30%
In terms of my career plans, female faculty were:	very influential	58%	71%	24%	29%
	not influential	47%	59%	20%	24%
In terms of my career plans, male faculty were:	very influential	61%	72%	22%	34%
	not influential	45%	52%	20%	28%
Was employed by a professor:	Yes	62%	75%	26%	35%
	No	50%	61%	28%	25%
Was a teaching, laboratory, or research assistant:	Yes	67%	76%	26%	40%
	No	49%	59%	20%	23%

Table 11

Effects of Peer Influence On Increased Self-Confidence and Grades: Total Sample of Women and Men Students

		Percent with Self-Confidence		Percent with High Grades	
		Women	Men	Women	Men
Percentage of students reporting self-confidence or high grades:					
Student body is very competitive:	Yes	52%	64%	20%	25%
	No	50%	62%	29%	39%
For my academic growth, discussions with same-sex peers were:	very valuable	54%	67%	21%	26%
	not valuable	42%	43%	14%	21%
For my academic growth, discussions with opposite-sex peers were:	very valuable	55%	67%	21%	26%
	not valuable	43%	55%	25%	27%
Number of courses that were predominantly male:	Three or more	46%	63%	17%	28%
	One or two	52%	64%	20%	26%
	None	51%	58%	22%	27%
Number of course that had about the same proportion of men and women:	Three or more	46%	59%	23%	28%
	One or two	54%	66%	22%	26%
	None	57%	64%	19%	23%
Number of course that had no males enrolled:	Three or more	61%	-	21%	-
	One or two	58%		21%	
	None	46%		21%	

APPENDIX TABLES--COMPARISONS BY COLLEGE

Table A1

College Grades of Women and Men Students:
By Major and by College:
Percent with Grade Averages of A- or better

	Women			Men	
	A5	A1	A2	A1	A2
Undergraduate major:					
History and civilization	22	31	5	35	14
English, languages	21	33	6	28	*
Social, behavioral sciences	20	23	13	22	40
Engineering	18	28	34	36	29
Physical sciences	14	16	14	36	31
Biological, medical sciences	10	32	*	44	*
Arts	12	36	*	*	*
Other	0	23	*	29	*
Undecided	*	7	*	39	*

*Too few cases for comparison.

Table A2

Improved Competencies During College: Differences by College for Women and Men Students

	Women						Men			
	A5	A1	A2	A4	A6	A3	A1	A2	A4	A6
Percentage who felt they had improved their ability to:										
Speak effectively	81	73	73	78	68	75	76	76	82	76
Write well	83	71	77	71	83	78	75	83	73	88
Demonstrate leadership	67	53	62	62	53	57	58	60	69	61
Appreciate cultural and ethnic diversity	86	84	84	86	87	82	82	80	77	81
Utilize quantitative tools	48	41	40	48	48	39	58	59	71	72
Evaluate options and make informed choices	87	86	85	86	84	82	87	88	87	86
Negotiate compromises	78	74	75	80	75	73	72	72	78	75
Organize and present ideas	88	87	88	86	87	89	85	90	84	89
Formulate creative and original ideas	71	68	66	73	67	73	72	77	74	74
Work comfortably with members of the opposite sex	37	80	87	88	83	67	75	74	82	62
Work comfortably with members of the same sex	85	79	77	85	70	70	72	75	83	69
Acquire new skills and understanding on my own	85	85	83	85	83	84	82	83	79	81
Pursue a task to completion	75	71	75	76	74	73	68	67	70	72

Table A3

Student Ratings on Various Contributors to their Academic Growth: Differences by College for Women and Men Students

	Women					Men				
	A5	A1	A2	A4	A6	A3	A1	A2	A4	A6
Percentage reporting each of the following was "very valuable" to academic growth:										
Conversations with same-sex peers	61	61	61	46	70	51	44	46	30	44
Conversations with opposite-sex peers	41	58	58	51	64	43	43	41	33	35
Talks with family members (including siblings)	54	49	52	48	52	46	37	39	32	36
Researching and writing course pspaers	46	38	44	26	37	41	32	35	18	38
Course lectures	44	32	33	26	30	35	22	28	20	27
Reading assignments	38	35	38	29	27	32	27	33	30	23
Exchange of ideas in class	34	29	31	23	30	24	17	24	15	22
Experience with campus activities (paper, student government, etc.)	32	27	32	14	34	25	19	24	15	24
Nonassigned reading (not related to courses)	27	30	28	23	24	26	21	7	17	21
Discussions with male faculty	29	19	22	14	20	17	17	19	8	19
Discussions with female faculty	31	15	18	9	19	23	8	10	8	12
Independent study	20	17	30	12	14	15	15	20	13	17
Nonassigned reading (related to courses)	10	13	12	9	5	13	9	8	7	2
Contact with residence hall advisors	24	13	13	7	9	13	10	7	7	9
Participation in honors work	5	5	7	4	7	2	7	5	4	6

THE COLLEGE ACADEMIC ENVIRONMENT

STUDENT-FACULTY INTERACTION

Lois Monteiro

Faculty-student interaction patterns reflected in the Study of Coeducation data show relatively few differences in this regard between the sexes. On the whole, men and women students in the academic environment behave similarly when it comes to initiating contact with faculty members. Although there are clear differences by academic year among the student body in the amount of contact with faculty, as well as differences among other student groups in the University (major study programs or achievement levels), the man-woman pattern remains the same throughout. Undergraduate life in coeducational institutions seems to offer equal opportunities for faculty contact to men and women, but for this aspect of the academic experience, women in the single-sex schools may have an advantage over both men and women in coed institutions.

It is a truism that in planning for a student-faculty ratio, administrators take into consideration the many advantages to students that accrue from close contact with faculty. Among these are intellectual stimulation, sponsorship, and the fostering of student aspirations. Brown University, like other Ivy League schools, has taken pride in the access that students have to all, even the most senior professors. The value of such access is a basic reason why Brown has never separated its graduate and undergraduate faculty. The importance of faculty contact was one reason why the Watson

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Committee (a group charged to study the size of Brown's undergraduate student population) recommended that the number of undergraduates in residence be fixed at slightly more than five thousand.

The Coeducation Study took student-faculty interaction as one of its principal targets because of its centrality to the educational experience of undergraduates. Sex differences in access to faculty, it had been suspected, could lead to important career and educational quality differences between men and women students. Among the arguments that have been put forward for expanding the number of women faculty (apart from the compelling advice of the Federal Court), is that women students need female professors as role models and may be more at ease with them. Related to these arguments has been the persistence of old fears and myths regarding male faculty exploitation of female students or new speculation that female faculty could exploit male students. These provoked some appropriate questionnaire items. The extent to which students perceived faculty as supportive and interested in their single and collective welfare was also investigated, as were the types of faculty contact experienced by students. The particular types of student-faculty interactions that were selected for examination were social, academic contact in an independent or group study with individualized instruction, student employment, or sponsorship. The Study looked for evidence of male-female differences, as well as differences by sex for each undergraduate class, since the student-faculty relationship often changes as students progress through the college years.

An index of general faculty contact was developed by combining each student's responses to eleven items related to faculty-student interaction patterns. Included in that scale were general questions that fall into the following five categories of faculty-student contact:

1. formal and informal activity on student-faculty committees
2. discussions with male and female faculty
3. student reading or independent study courses sponsored by a faculty member
4. social experiences which included faculty
5. employment by a faculty member.

Students were assigned a score of one for each experience they reported, providing a range of zero (no faculty contact), to eleven (a "yes" response to all the contact items). The means for men students ranged from 4.1 for freshmen to 6.5 for seniors. The women student means were slightly higher, ranging from 4.5 for freshmen to 7.0 for seniors. The overall mean for men was 5.2, for women in coed schools it was 5.5, and for women in single-sex schools 6.0. Thus while women in both settings had scale scores higher than men, the women in single-sex schools had more contact than those in coed schools.

When scores were combined into high and low faculty contact categories (high scores established at six or more positive items), greater proportions of female students at each class level fell into the high faculty contact category than did men students, and levels of contact increased for both sexes over the college years (Table 1). Women consistently had higher faculty contact than did men. The faculty contact experience for coeducational school students was then separately calculated, and the pattern of women reporting greater contact held for three of the four academic years. The exception was sophomore year, when 41% of the coed men had high faculty contact, compared to 38% of the women. When only women in coeducational and single-sex institutions are compared, the latter group show consistently greater proportions in the high contact category. In the first two college years the difference is especially striking. For the single-sex schools 41% of the freshmen and 62% of sophomores had high faculty contact scores, whereas for the coeducational 26% and 38% respectively of the freshmen and sophomore women had high scores for faculty contact. Although women in both single-sex and coeducational situations have greater faculty contact than men, the women in the single-sex schools show the highest levels of faculty contact.

The level of faculty-student contact by major was next examined to determine whether enrollment in the various institutional departments and programs would differentiate men and women. One could speculate, for example, that the higher female contact scores in coed settings were due to a disproportionate dispersion of women in departments with easy faculty access (i.e., departments with less social distance between their faculty and their students). As Table 2 shows, the pattern of relatively greater faculty contact by the coed women held over most of the departments. Only two concentrations, biological science and fine arts, revelaed that men had slightly (but not significantly) more faculty contact. These findings imply some closure to the question of general access to faculty by women students in the coed setting, for even in the most "masculine" departments (physical sciences or engineering, for example), women students reported more contact than did men.* When we again compare women from coeducational schools with those from single-sex schools, we see that women in the latter report greater access among all majors.

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*Men in the residual category (other concentrations) did show a higher contact score, but since relatively few students (38 men and 64 women) were in the category and it represented a wide range of departments, it has not been emphasized in the text.

It was also hypothesized that the student's academic standing, as measured by grade-point average, might be associated with faculty interaction, i.e., that better students would have more contact. If women had higher grades than men, perhaps higher faculty contact for women reflected that grade difference. But a comparison of male and female faculty contact scores with grade categories ruled that out. The pattern of women's higher faculty interaction persisted at each grade level, and the interaction increased with grade level for both sexes. Among students at the C grade level, 34% of the men and 38% of the women had high faculty contact. At the B level, 45% of the men and 56% of the women were in the high contact category. And at the A level, these proportions reached to 51% of the men and 59% of the women. Thus the women students' higher contact with faculty cannot be attributed to grade differences alone.*

I. TYPES OF FACULTY-STUDENT INTERACTION

By turning to an examination of the particular forms of faculty-student contact, we can determine if, despite similarities in the quantity of that contact by males and females, there are nevertheless some qualitative differences in type, purpose or intensity (i.e., large or small group interaction, sponsorship, or advisory interaction). First we turned to coed schools where we found that the patterns of faculty-student contact varied little by sex. These patterns are displayed in Table 3. With regard to the type of intervention, somewhat smaller proportions of both men and women

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*One methodological note might be raised in this context, however. Studies in medical sociology have shown that women seem to be freer to report behavior that may reveal personal weakness, e.g. psychiatric symptoms or emotional problems. If discussing problems with faculty or meeting with faculty is "socially undesirable," it is possible, though hardly conclusive, that men students may be underestimating their level of faculty interaction.

(about 20% of each) had ever asked a professor to sponsor a reading course or an independent study project, and relatively few of either sex (20% of the men and 24% of the women) had invited a faculty member to a social function at a dorm or apartment. These were two interactions that required student initiative, and in the coed schools, both sexes show an equal lack of such initiative.

On the other hand, almost all students (95% of men and 96% of women) had talked to a faculty member about academic matters; and the majority had done so repeatedly (three or more times). With regard to social activities, again in the coed schools there were no differences in interaction between faculty and male and female students. About two-thirds of both sexes experienced some sort of social contact with a faculty member and a considerable number reported contact in small gatherings of fewer than fifteen people. The sexes were also as likely (with a slightly greater proportion of women) to request faculty recommendations for jobs and for graduate schools.

The only item in this series in which students in the coed schools did show a sex difference, albeit a small one, had to do with discussion of personal matters with faculty. Women students were somewhat more likely to have discussed a matter deemed to be personal, and almost half of the women (47%), as compared to 37% of the men, claimed to have done so. Again the possibility that women feel freer to report experiences centering on personal matters than are men should be considered as an explanation of this difference. If that is so, then it follows that discussing a personal matter may well be seen by men as behavior that is socially undesirable, with the result that it is under-reported.

For this series of questions there was relatively little difference between the women in single-sex and coed settings except for one item that did show a difference -- on the experience of inviting faculty members to a dorm or apartment. In the single-sex setting 45% of the women reported this behavior, compared to 24% of the coed women. For the other faculty interaction behaviors, there was (as Table 3 shows) remarkable similarity of the reports from single-sex setting and coed setting women students about asking a faculty member to sponsor an independent study, meeting with faculty in a large gathering, or discussing a course with a faculty member. For the remaining three items (asked for a recommendation, discussed a personal matter, met in a small gathering), there were less than five percentage points difference between the women in the two settings.

II. PERCEPTIONS OF FACULTY SUPPORT

The nature and content of student-faculty interaction was examined to determine if male and female students had different perceptions of the faculty's interest in, and support of, student development on intellectual, professional and personal levels. On the whole, there proved to be few differences between the sexes in the coed schools on a set of items in which the students were asked to estimate the proportion of their professors who had provided such supportive activity. Of the ten questions displayed in Table 4 the items "taught me important skills" and "helped me feel confident" had lower proportions of women replying in the affirmative. For the other aspects of interaction, such as "offered helpful advice," "demanded quality work," "interested me in his/her field," "helped with career decision," and "acknowledged my ideas," faculty were either rated higher by women or rated about equal by men and women. Some items were rated very low by both men and women. Fifty percent of the men and women said no professor had ever "helped with a career decision," and fifteen percent or less of each sex had the feeling that at least half of their professors took interest in their work. On the other hand students generally felt that most faculty were more interested in teaching than research, for only about 10% responded negatively to that item.

Women in the single-sex schools fared rather well on these items and reported higher levels of supportive faculty interaction than did coed men or women. The only items for which the setting made no difference were "helped integrate the course" and "helped with a career decision" where faculty again rated low. Single-sex school women reported more faculty support on feeling confident, learning skills, acknowledging ideas and receiving helpful advice than did either the women or the men in coed schools.

Roles that more specifically dealt with faculty sponsorship (in experiences such as employment, recommendations, mentor-apprentice settings, or committees) showed rather interesting differences between the sexes (Table 5). Women were more likely to serve as members of faculty-student committees; men were more likely to work with faculty members as laboratory, research, and teaching assistants. In the latter case the pattern reversed earlier reports that women had more contact with faculty outside of recitation hours and suggests that men may receive more career-related attention from faculty. This pattern holds over all four classes, and proportions of both men and women having such sponsorship experiences increases from freshmen to senior years. With one other aspect of sponsorship -- recommendations for jobs and/or graduate and professional schools -- the data are consistent with overall assessments, i.e., a slightly larger number of females than males report this kind of faculty-student interaction.

III. SEXUAL BIAS EXPERIENCES

When the matter of a student's perception of sexually biased behavior by faculty is addressed, greater male-female differences emerge. Questions designed to adduce such information focused directly on the content of student-faculty exchanges. For all the items in this series (see Table 6), women turned out to be much more likely to have felt sexual bias than did men. With regard to faculty behavior, women were significantly more likely to have been made uncomfortable by what they perceived as an intellectual "put-down" from a professor. It should be noted that 23% of the women, compared to 4% of the men responded affirmatively to this item. About the same percentages (28% and 4%, respectively) felt that course readings were biased against members of their sex. Not surprisingly, women are more likely to have been made uncomfortable by a sexual joke told by a professor than are men (24% to 8%), as well as by a professor's comment on their appearance (8% to 4%). Although very few students of either sex report that they have been sexually approached by a professor, such advances are more often reported by women than by men (7% to 2%).

Women in single-sex schools were less likely than coed women to report sexually biased behavior. Nevertheless, the single-sex school women still reported considerably more bias than did male students in the study. The greatest amount of bias was reported by coed school women, then by single-sex school women, then by coed school men.

SUMMARY: FACULTY-STUDENT INTERACTION

The findings presented here suggest that coeducational settings provide equal opportunities for both sexes to experience the full gamut of responsive and responsible interaction with faculty during the undergraduate years. Women students in coeducational settings, rather than having less faculty contact than male students, report equal or more faculty contact, and women in single-sex settings report even greater support from faculty. Indeed, it would appear that it is the men rather than the women who, in general, need to be encouraged to make better use of faculty resources.

Yet there are two important exceptions to the general patterns. Men are more likely to serve as laboratory, research, and teaching assistants for faculty than are women in either setting.* While the differences are admittedly small, these are crucial positions with regard to sponsorship for jobs or for admission to graduate and professional programs; thus, equal opportunity in this area should be an institutional goal. The second exception lies in student awareness of bias based on sex. About one-fourth of the women in the coed setting and one-fifth of the women in single-sex schools report some experience of sexually-based bias from faculty. The proportion of men reporting such bias, however, is appreciably smaller. Programs to increase faculty awareness of student sensitivity to bias and the implications for achieving the aims of undergraduate education could serve students and faculty alike.

For the most part, the findings on student-faculty interaction are encouraging. While single-sex school women seem in the most favorable position with regard to faculty contacts, the pattern of education that has been evolving over the past one hundred years, of men and women learning together in coeducational settings, also seems to provide equal opportunity for men and women to meet with and experience the faculty-student interaction that characterizes best the meaning of higher education.

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*Since these positions are sometimes linked to financial need, the difference may reflect need rather than sexual preference; nevertheless, whatever the cause of the difference, the effect is the same.

Table 1. Percentage of Respondents With High Faculty Contact by Sex, Class, and Coed Status

	Sex			
Class	Total Men %	Total Women %	Women Coed %	Women Single-Sex %
Freshmen	21	31	26	41
Sophomore	41	47	38	62
Junior	50	62	60	65
Senior	70	78	76	83
Mean Scores:	5.2	5.6	5.5	6.0

Table 2. Percentage of Respondents with High Faculty Contact Scores by Major and by Sex

	Sex			
Major	Total Men %	Total Women %	Women Coed %	Women Single-Sex %
History/Civilization	50	55	53	69
English/Language	46	56	56	58
Social/Behavioral Science	42	52	45	60
Engineering/Math	35	43	38	57
Physical Science	48	60	54	67
Biological Science	49	45	42	55
Fine & Applied Arts	69	66	62	69
Other	60	37	37	38

Table 3. Percentages of Men and Women Students Reporting Particular Types of Faculty Interaction

	Sex			
Type of Interaction	Total Men %	Total Women %	Women Coed %	Women Single-Sex %
Asked faculty member to sponsor independent study	20	21	21	21
Asked faculty member for a recommendation	37	42	41	45
Discussed a personal matter with faculty member	37	38	47	52
Discussed a course with faculty member	95	96	96	96
Invited faculty to dorm/apartment	21	30	24	42
Met faculty in gathering of 15 or more	68	71	72	72
Met faculty in gathering of 15 or less	59	62	63	61

Table 4. Percentage of Men and Women Students Reporting Experience of Supportive Faculty Interaction*

Kind of Experience	Sex Total Men %	Total Women %	Women Coed %	Women Single-Sex %
Offered helpful advice	29	31	28	38
Helped me feel confident	25	25	22	32
Demanded quality work	69	72	69	79
Interested me in his/her field	34	36	36	39
Taught important skills	35	31	29	36
Helped with career decision	3	3	3	4
Helped integrate course	20	23	24	24
Positively acknowledged my ideas	28	34	30	43
Showed interest in my work	8	13	10	17
More interested in own research	12	7	9	4

*By 50 percent of faculty

Table 5. Percentage of Respondents Reporting Specific Faculty Sponsorship Experiences by Sex and Class

	Sex			
Sponsorship Roles	Total Men %	Total Women %	Women Coed %	Women Single-Sex %
Worked for Faculty				
Freshman	5	6	5	7
Sophomore	13	12	10	15
Junior	21	20	22	17
Senior	31	27	27	27
Student-Faculty Committee Member				
Freshman	5	8	6	12
Sophomore	11	15	13	17
Junior	12	21	18	28
Senior	24	30	28	33
Recommended for job or graduate school				
Freshman	8	12	12	12
Sophomore	23	35	34	36
Junior	45	50	45	58
Senior	79	82	80	86
Worked as teaching, laboratory, or research assistant				
Freshman	5	5	3	5
Sophomore	15	12	8	13
Junior	28	21	20	23
Senior	41	31	34	27

Table 6. Percentage of Male and Female Students Perceiving Sexually Biased Behavior by Faculty

	Sex			
Behavior	Total Men %	Total Women %	Women Coed %	Women Single-Sex %
Intellectual "put-down" by a professor	4	23	26	17
Sexual joke by a professor	8	24	26	19
Professor's comment on appearance	4	8	9	7
Sexual advance by a professor	2	7	9	6
Course readings biased against own sex	4	28	30	25

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THE DEVELOPMENT OF RELATEDNESS AND AUTONOMY IN THE COLLEGE YEARS

Helen S. Astin and Laura Kent

The undergraduate years are a period when young adults must deal with two crucial developmental tasks. On the one hand, they must establish a sense of self, an identity independent of their parents and families. To this end, they are evaluating their own strengths and weaknesses, questioning heretofore accepted beliefs, formulating values and convictions, and gaining strength to act upon them -- in short, moving to become autonomous human beings. On the other hand -- and simultaneously with the first task -- they must make contact with other people and find their place within the social network. This task requires their forming solid and comfortable relationships with peers of the same sex and of the opposite sex, defining and proving their own sexuality, and becoming involved in intimate relationships that may demand greater give-and-take than was previously expected of them -- in short, moving to establish a sense of relatedness with other human beings. Because of their central importance, these two aspects of student development should be an integral part of any study of college students.

This paper, then, focuses on six main areas: self-concept, as reflected in self-ratings; opinions and values; worries; interpersonal relationships, including friendships and sexual relationships; sex-role ideology; and relatedness and autonomy.

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Three basic questions are examined. First, how do the sexes compare in these areas? How do women and men differ in their self-concepts, values and concerns, and in their attitudes toward and behavior in interpersonal relationships? We were especially interested in their differences with respect to sex-role ideology, since any such differences are a potential source of conflict between the sexes.

The second question was this: How do students develop in these areas over the college years? Since the study was not longitudinal in design, we had to take a cross-sectional approach in answering this question. That is, we compared the questionnaire responses of students in the four college classes -- freshman, sophomore, junior and senior -- inferring from this comparison that differences among the classes represent changes over time. Such an inference rests on two assumptions: (a) that there is very little attrition from one class to another; and (b) that students entering the institutions at the time of the survey are similar to those entering the institutions at earlier dates. Obviously, this latter assumption cannot be proved; indeed, we know that generational differences do occur. Nonetheless, the time span involved (four years) would seem to be brief enough to give some validity to the assumption that entering freshmen have not changed too much in their basic characteristics.

The third question was this: How are different college environments related to development in these areas? More specifically, we wanted to investigate similarities and differences in the characteristics and development of women attending single-sex institutions and those attending coeducational institutions. Because the study was not longitudinal in nature and because cross-tabulations rather than multivariate analytic techniques were used, we cannot infer causation on the basis of these data. That is, we cannot assert definitely that differences in the development of these two groups of women resulted from the differential impact of the two types of institutions. But by comparing their responses overall and at two points in time, the freshman and the senior year, we can at least get some sense of how they differ in their "input" characteristics and in the way they change over the college years.

I. SELF-RATINGS

One of the items on the survey questionnaire asked respondents to rate themselves on each of 21 traits as "compared with the average student of your own age." The traits included skills and abilities, personal and interpersonal characteristics, and political orientation. Table 1 shows the proportions, by sex, who rated themselves as being in the top 10% on each of the traits.

Generally, college students tended to see themselves as superior in their understanding of others, academic ability, and drive to achieve; at least one-fourth of both sexes indicated that they were in the top 10% on these traits. They were least likely to see themselves as politically conservative or politically radical; fewer than one in ten respondents perceived themselves as being in the top 10% on these political orientations. Indeed, only about 12% of each sex labeled themselves as politically liberal. Apparently, these students were simply not committed to any political ideology, and this was true of both men and women, although more men (6.5%) than women (3.6%) labeled themselves politically conservative. This finding is consistent with other evidence that, over the last decade, the proportions of students describing themselves as "middle-of-the-road" in their political views have increased (Astin, 1977). Perhaps this shift is attributable to a distaste for political labels rather than indifference to social and political issues.

On some traits, there was almost no difference between the sexes. Thus, approximately equal proportions of men and of women rated themselves in the top 10% on drive to achieve (29% of the women, 31% of the men), social self-confidence (16% of the women, 15% of the men), artistic ability (11% of the women, 10% of the men), and assertiveness (16% of the women, 15% of the men). Their similarity on these two last traits is noteworthy, in that artistic ability is often regarded as a "feminine" quality, and assertiveness as a "masculine" one; to some extent, then, this group of college students did not embody sex-role stereotypes.

In other ways, however, their self-ratings did reflect such stereotypes. For instance, men were much more inclined than women to give themselves high ratings on such supposedly masculine traits as athletic ability, mathematical ability, mechanical ability, and competitiveness. Women, on the other hand, fit the stereotyped expectations insofar as they were more likely to see themselves as having interpersonal skills (as reflected in their higher self-ratings on popularity with the same sex and with the opposite sex and on understanding of others), sensitive to criticism, and physically attractive.

But even beyond these sex stereotypes, men had a more favorable self-image than did women. For example, 45% of the men, but only 31% of the women, rated themselves as very high in academic ability. Further, men were somewhat more likely than women to see themselves as original, intellectually self-confident, and possessed of leadership ability. Interestingly, women were slightly more likely to say that they were stubborn.

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How do students' self-concepts change over time? Do the sexes develop in the same direction with respect of self-ratings? Table 2 attempts to answer these questions by showing the proportions of men and women in each of the four undergraduate classes who rated themselves in the top 10% on four key traits. As freshmen, men were considerably more likely than women to see themselves as intellectually self-confident; in the sophomore year, the proportion of women rating themselves high on intellectual self-confidence rose by two percentage points, and the proportion of men rating themselves high dropped by two percentage points, thus narrowing the gap between the sexes. By the junior year, however, the men had recovered their sense of intellectual self-confidence, and during the last two years of college the proportions of both sexes rose by only one percentage point. In the junior and senior years, then, women still lagged behind men by 14 percentage points on this trait.

The pattern with respect to social self-confidence is somewhat different. The sexes started out on an equal basis in the freshman year, with 15% of each giving themselves high ratings. In the sophomore year, men again registered a drop, with only 11% ranking themselves high on this trait, and women gained somewhat. Both sexes gained during the junior year. By the time they were seniors, men and women were again on equal footing, with 19% seeing themselves as unusually self-confident socially.

The developmental pattern with respect to self-ratings of academic ability is similar for the two sexes. Both experience a slight drop during the sophomore year, but gained in both the junior and senior years. Nonetheless, in all four years, the women lagged behind the men in the tendency to rate themselves high on academic ability, the discrepancy being between

13 and 16 percentage points.

In the freshman year, women were more inclined than men to rate themselves in the top 10% on drive to achieve; in the sophomore year, the proportion of men giving themselves high ratings on this trait rose, and the proportion of women dropped. At no point did women regain their initial advantage. In the senior year, 34% of the men, but only 29% of the women, gave themselves high ratings on drive to achieve.

This analysis tends to confirm what national studies have indicated: that one of the benefits of attending college is an increase in one's sense of self-worth. It is reassuring that, over time, young people come to feel more positive about themselves generally. Nonetheless, faculty and administration should be sensitive to the difficulties that undergraduates, especially men, may encounter in the sophomore year. Further, the tendency of women to indicate a decrease over the college years in drive to achieve constitutes a problem that deserves more careful scrutiny.

To what extent is this tendency -- as well as other changes in self-ratings -- influenced by the college environment? Do women's colleges have a more positive effect on the self-concepts of their students than coeducational institutions do? Table 3 suggests some answers to these questions by comparing the proportions of women at the two types of institutions who ranked themselves in the top 10% on 12 traits in the freshman and in the senior year.

Women entering single-sex institutions had a markedly more positive self-image than did women entering coeducational institutions. On virtually all traits -- but especially popularity with the same sex, leadership ability, originality, competitiveness, academic ability and drive to achieve -- higher proportions of freshmen at women's colleges than at coeducational institutions rated themselves as being in the top 10%. The only exceptions were understanding of others and popularity with the opposite sex, two traits on which those entering coeducational institutions were more inclined to see themselves as superior.

The developmental patterns of these two groups of women differed as well. Over the college years, women in single-sex institutions gained strongly in their self-rating of understanding of others and gained slightly in their ratings of academic ability, assertiveness, popularity with the opposite sex, popularity with the same sex, and originality. But by the time they were seniors, they were no more inclined than they had been as freshmen to see themselves as having leadership ability, and their self-ratings of mathematical ability, social self-confidence, intellectual self-confidence, competitiveness, and drive to achieve had dropped. Senior women at coeducational institutions also became less inclined to rate themselves high on competitiveness and on drive to achieve. With respect to other traits, however, they registered gains, sometimes very large ones. Thus, larger proportions of seniors than of freshmen at coeducational institutions rated themselves in the top 10% on academic ability (an increase of over 12 percentage points), popularity with the same sex (an increase of over 8 percentage points), leadership ability, social self-confidence, intellectual self-confidence, understanding of others, mathematical ability, originality, popularity with the opposite sex, and assertiveness. In short, by the time they were seniors, the two groups of women were more nearly on a par with respect to self-concept. Whatever its other effects, attendance at a coeducational rather than a single-sex institution seems to have a positive impact on the self-esteem of women.

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II. OPINIONS AND VALUES

The survey questionnaire contained one item asking respondents to indicate the extent to which they agreed or disagreed with a number of statements related to social and campus issues; another item asked respondents to indicate the importance of various factors in their choice of a long-term career. Table 4 shows differences between the sexes on some of these issues, as well as developmental patterns over the college years.

As the last column (showing the total for each sex) indicates, women were regarded as the more mature sex by both men and women; that is, relatively few men, but a fairly large proportion of women (from 17% of the freshmen to 19% of the seniors), strongly agreed with the statement "people my age of the opposite sex usually seem less mature than those of my own sex." Moreover, this view of men as the less mature of the sexes persisted over time.

Both as freshmen and as seniors, men were somewhat more inclined than women to agree strongly with the statement "religion is less important to me than it used to be." Among men, the tendency to agree with this statement increased steadily from one undergraduate year to the next, the greatest jump (about six percentage points) occurring between the freshmen and sophomore years. Among women, the pattern was slightly different: the proportion of women agreeing with this statement had increased by six percentage points in the second year and by four percentage points in the third year, but then dropped by four percentage points in the fourth year. Apparently religion had again come to play a relatively important role in the lives of some women by the time they were seniors. Nonetheless, seniors of both sexes were more inclined than were freshmen to say that religion was less important to them.

This finding is consistent with the results of other national studies; the drop in religiosity may be more a function of maturation than of the college experience (Astin, 1978).

Men tended to be more cynical than women about the individual's ability to effect changes in society, and this sex difference held for each undergraduate year except the sophomore year, when about equal proportions strongly agreed with the statement "realistically, an individual can do little to bring about changes in our society." Men tended to become slightly more optimistic on this point over the college years, whereas women remained about the same: 6% of the freshmen women, and 5.5% of the senior women, strongly agreed with this statement.

Besides being less cynical than men, women also tended to be more altruistic, as reflected in the reasons they gave for their long-term career choice. Both as freshmen and as seniors, women were more likely than were men to say that a very important factor in their choice of a career was that it would give them an opportunity to make an important contribution to society and to be helpful to others. The proportion of women citing the first of these reasons -- "can make an important contribution to society" -- increased by about four percentage points. Senior men were somewhat more likely than their freshmen counterparts to cite the second reason -- "can be helpful to others" -- whereas the proportion of women was about the same in the two classes. Between the sophomore and the junior years, both sexes registered a drop in the proportions citing these reasons. Perhaps we may conclude from this finding that, just as the sophomore year represents a kind of crisis in self-esteem, especially among men, so the junior year may represent a crisis in idealism and a disillusionment with humanitarian values, at least with respect to career goals.

Women attending single-sex institutions were compared with those attending coeducation institutions on the same five items (Table 5). Their overall differences were slight with respect to the importance of religion, the power of the individual to effect change, and the desire to make an important contribution to society as a factor in career choice. Those attending women's colleges were the more likely to see men as less mature than women, whereas those in coeducational institutions were the more likely to give high priority to the career goal of being helpful to others. With respect to developmental patterns, the two groups of women increased about equally over the college years in their tendency to see men their own age as less mature than women, and both became more likely to say that religion was less important to them, though on the latter item the increase was greater among those in women's colleges. The proportions of freshmen and of seniors in women's colleges who strongly agreed that the individual could do little to change society were about the same, whereas women in coeducational institutions became somewhat more optimistic on this point over the college years.

III. WORRIES

The survey questionnaire included one open-ended item that read: "What are the two or three things, or situations, that you worry a lot about?" The free responses were then classified into four major categories: worries about the future (e.g., "where I'm going," career decisions, acceptance to graduate school); academic worries (e.g., getting assignments done, tests, grades, failure); interpersonal worries (e.g., meeting the opposite sex, love relationships, being gay); personal worries (e.g., appearance, being overweight, loneliness, insecurity, beliefs and values). Table 6 shows the proportions of respondents (classified according to a number of salient characteristics) mentioning various types of worries. Overall, college students were most likely to worry about the future, then about academic problems, followed by interpersonal problems. Only 12% of the total group expressed personal worries.

Women were slightly more likely than men to be worried about academic matters, and men slightly more likely to be concerned about interpersonal relationships. Over time, students became more inclined to worry about the future: only one-fourth of the freshmen and sophomores, but two-fifths of the seniors, mentioned such worries. They became less inclined, however, to mention academic worries (over one in three freshmen, but only 18% of the seniors). It makes good sense that freshmen, lacking experience, would be more inclined than other classes to be uncertain and anxious about their ability to succeed academically in college. Perhaps those whose academic problems were real dropped out during the undergraduate years, whereas those who survived into their senior year became increasingly more confident of their abilities. The proportions expressing interpersonal worries also decreased steadily (though less dramatically) with each academic year, attesting to a growth in self-confidence and social ease over time. The developmental pattern with respect to worries of a personal nature was not so clear-cut; perhaps personal problems can strike at any time and are essentially unrelated to the college experience.

Non-white students were much more likely than white students to mention academic worries, whereas white students were much more likely to be concerned about interpersonal relations and slightly more likely to express worries about the future and about personal matters. Students with relatively low college grade-point averages were, logically enough, more likely to be anxious about academic matters; in contrast, those with high GPAs more often expressed worries about the future, interpersonal relations and personal matters.

There were some intriguing differences by major field in the types of worries reported. Thus, those majoring in the arts, the physical sciences, or the biological sciences and medicine were most likely to worry about the future. Somewhat curiously, those who were undecided as to major were least likely to express such worries. Apparently, they did not let their uncertainty over a college major concern them too much. The "undecideds" were more inclined than average, however, to express academic worries, which bothered relatively few of those students majoring in history, English or the arts. History majors were somewhat more likely than average to mention both interpersonal and personal worries. English majors frequently reported interpersonal worries, but those majoring in biology or medicine were relatively free of such concerns. Finally, personal worries were rarely mentioned by students majoring in engineering, the physical sciences, the biological sciences and medicine, or the social and behavioral sciences.

Though not shown in the table, men who had never had a sexual relationship frequently reported interpersonal worries, whereas women who had never had a sexual relationship tended to worry about academic matters.

Table 7 compares the worries of women at single-sex institutions with those of women at coeducational institutions in the freshmen and senior year. Overall, those at women's colleges were more likely to worry about the future, whereas those at coeducational institutions were more likely to worry about interpersonal and personal matters; about three-tenths of both groups expressed academic concerns. The developmental patterns were roughly the same at the two types of institutions: over time, the proportions worrying about academic and interpersonal matters dropped, and the proportions worrying about the future increased. In the case of women enrolled at coeducational institutions, the increase was substantially greater: 22 percentage points between the freshmen and senior years, compared with an increase of only 14 percentage points for those at women's colleges. Moreover, though the proportions of the latter group reporting personal worries dropped slightly, the proportion of women at coeducational institutions reporting such worries rose slightly.

One thing that these analyses make abundantly clear is that, over the college years, academic problems tend to lose their potency, and worries about the future become dominant. It may be that this has always been the case; as graduation nears and as they are confronted by the need to make decisions and to move into new arenas, students inevitably experience anxiety. Or it may be that the present tight job market for college graduates creates this anxiety, or at least exacerbates it. Whatever the explanation, educators and policy-makers should be aware of this particular kind of stress and should consider what steps might be taken to alleviate it.

IV. INTERPERSONAL RELATIONSHIPS

The number, nature, and quality of interpersonal relationships during the undergraduate years undoubtedly color the entire college experience and help to determine the overall development and well-being of these young adults. The survey questionnaire focused on friendship and on sexual or intimate relationships as being of crucial importance.

Friendships

Table 8 compares men and women on the number of close friends they claim, the gender of those friends, and the time spent with them; Table 9 indicates the types of activities which respondents most frequently engaged in with their friends of the same sex and of the opposite sex.

Over three-fifths of both sexes reported that they had between four and nine close friends; women tended to have more close friends who were female and to spend more time with them than with their male friends. The converse was true for men. More women than men, however, said they had at least five close friends of the opposite sex.

Most respondents -- whether women or men -- indicated that they were as likely to engage in a given activity with opposite-sex friends as with same-sex friends. For instance, 83% of the men and 87% of the women said they discussed academic or intellectual issues with friends of both sexes. Beyond this, men were more likely to discuss various issues, go to lunch or dinner, and study with their male friends but to go to movies, plays, and concerts with their female friends. In addition, 11% said they went to lunch or dinner with female friends, and 19% discussed their personal and emotional problems with female friends. About one in twenty men, but only 2% of the women, said they did not discuss such problems at all with their friends. Thus, among some men (and a few women), the feeling that one should not admit to having personal or emotional problems may still be strong.

Women were much more likely to discuss emotional problems, study, and go to lunch or dinner with their female friends; they were slightly more likely to discuss academic issues with their female friends; and they were slightly more likely to discuss political and social issues and to go to the movies, plays and concerts with their male friends. Studying was a solitary activity for 31% of the men and 19% of the women.

Though not shown in the tables, certain other student characteristics were associated with friendship. For instance, those students with very high grade-point averages (A or A+) tended to have fewer close friends than average, and those with lower college GPAs tended to have a large number of close friends. The most likely explanation for this difference is that higher-achieving undergraduates become so involved in their course work that they have little opportunity to socialize with a large number of other students or to establish more than a few close friendships.

Men in the physical sciences and women in engineering reported fewer close friends than students of both sexes in the biological sciences and medicine. Two interpretations are possible here: first, some fields may attract students who tend to be gregarious, and others to attract social isolates. Second, some fields may impose certain conditions (in terms of the way in which the work is organized, in and outside of class) that operate to limit opportunities for personal interaction.

Intimate Relationships

Although a large majority of both sexes (80% of the men and 74% of the women) said that sexuality was an important part of their lives, a substantial minority (20% of the men and 26% of the women) said they had never had a sexual experience. In the freshman year, women were much more likely than men to be virgins (41% and 26%, respectively), but that difference had shrunk by the senior year, when only 14% of the women (compared with 12% of the men) said that they had never had a sexual relationship. Moreover, women were somewhat more likely than were men to be involved in an intimate relationship at the time of the survey (52% and 45%, respectively).

Various college environmental factors were associated with sexual experience. For example, among men, those living in fraternities were more likely to have had sexual relationships than were those living in men's dormitories. Among women, those living in coed dormitories were more likely to have had intimate relationships than were those living either in sororities or in women's dormitories. Moreover, four in five of the women attending coeducational institutions, compared with three in five of those attending women's colleges, reported past sexual relationships. Because of the limitations of the data reported here, it is, of course, impossible to assert any causal connection between these environmental conditions and sexual experience.

Those respondents who reported that they had had a sexual relationship were asked to complete a series of questions on the degree to which they engaged in certain kinds of behaviors while involved in such a relationship. Men and women were about equally likely to say that they took the other person into consideration in all that they did; in addition, equally small proportions of both sexes said that such a relationship caused them to limit their friendships with members of the opposite sex. Women were more likely than were men to report that they restricted their sexual relationships with other individuals when they were involved in an intimate relationship. Men, on the other hand, were more apt to say that they avoided making a commitment. Finally, responsibility for contraception was more often assumed by women than by men.

All respondents were asked to indicate the extent of their agreement or disagreement with a series of statements involving opinions and attitudes about interpersonal relationships. Table 10 indicates the proportions of men and of women saying that they strongly agreed with each of the statements.

On some points, men and women were in virtual agreement. Close to half of both sexes believed strongly that living in a coeducational dormitory made it easier to have friends of the opposite sex; about one-third said it is important to have sexual relationships before marriage; and one-fourth believed a couple should live together for some time before getting married.

On other items, the sexes differed substantially. Thus, over twice as many women as men felt strongly that "two people should know each other really well before becoming involved in a sexual relationship." Women were also more likely than men to say that, at present, friendship was more important to them than a sexual relationship. Men, on the other hand, were much more apt to believe that living in a coeducational dormitory made it easier to have an active social life, and slightly more likely to say that a sexual relationship had a positive impact on their academic performance (though relatively few of either sex agreed strongly with this statement).

Table 11 compares the responses of women attending coeducation institutions with those of women attending single-sex institutions. Generally, the former group can be characterized as more liberal or permissive in their attitudes toward intimate relationships. They were much more likely to believe that a couple should live together before getting married and that having sexual relationships before marriage is important. In addition, they were somewhat more likely to believe that a sexual relationship improved their academic performance, but markedly less likely to feel that two people should know one another very well before getting involved in a sexual relationship. Those attending women's colleges, on the other hand, had a greater tendency to say that friendship was more important to them than a sexual relationship at the present time. Once again, it is impossible to determine what causal connections are involved here. It may be that attending a coeducational institution leads to more permissive attitudes toward sex; or it may be that those who have permissive attitudes to begin with are more likely to attend a coeducational than a single-sex institution.

V. SEX-ROLE IDEOLOGY

The survey questionnaire probed sex-role ideology by means of one item that asked respondents to indicate their preference with respect to life patterns (marriage, children, employment) 10 to 15 years in the future, and another item that asked for their views on whether mothers should work (part-time, full-time, or not at all) when their children are at different ages. Table 12 shows the proportions of men and women indicating various preferences.

In some of their preferences, the sexes were alike. That is, only a very small proportion (about 5%) of both sexes anticipated being single in 10 or 15 years, and less than 2% said they would prefer not to be employed at all. Somewhat surprisingly, about one in five of both sexes said they would prefer to have no children. This finding tends to support the observation that there is a trend toward childlessness in our society; people are coming to question the idea that, in order to be fulfilled as human beings, they must have children.

On other points, the sexes differed. Thus, women were somewhat more likely than men to say they would prefer being married (80% versus 76%), whereas men were more likely to opt for living with a person of the opposite sex. Nine in ten men, but only two in three women, indicated that they wanted to be employed full-time. Women were more likely than men to express a preference for part-time work (28% and 7%, respectively). When we look at responses to items about partner's employment, potential sources of conflict between the sexes become clear. Most notably, only two in five men indicated that they wanted their partners to work full-time; moreover, 6% said they would prefer it if their partners were not employed at all. Since the proportion of women who wanted to work full-time was 68%, and the proportion who would prefer not to work at all was only 1.5%, one can foresee differences on this point between the partners in a marital or other intimate relationship. Apparently, many men still cling to traditional notions about the role of women, whereas women are more inclined to take a liberated view.

This observation is confirmed when we compare the attitudes of the sexes toward the mother's working while her children are young. Fully three-fourths of the men, but only 57% of the women, felt that mothers should not work when their children are infants; close to half of the men, but only 27% of the women, believed that the mothers of preschoolers (ages 2-5) should not work outside the home. Men took a more liberal stance with respect to part-time work for the mothers of young children, but the proportions of women were again even higher. Clearly, then, this is an area of potential conflict between the sexes.

Though not shown in the tables, certain other student characteristics were related to sex-role ideology. For instance, white students tended to be more traditional in their views about the appropriate roles of men and of women than did non-white students. In addition, those who reported having had sexual relationships in the past were more likely to hold liberal (non-traditional) attitudes, as were those with high degree aspirations.

Table 13 shows developmental patterns during the undergraduate years with respect to preferences about future life patterns. The proportions of both sexes saying they would prefer to be single in 10-15 years declined steadily; the proportion of men opting for marriage climbed (from 75% in the freshmen year to 79% in the senior year), while the proportion of women preferring marriage remained about the same. The proportion of men saying they would prefer to live with (rather than be married to) someone of the opposite sex dropped (from 15% of the freshmen to 12% of the seniors), whereas the proportion of women expressing this preference rose slightly (8.8% of the freshmen, 10.2% of the seniors). On this point, then, men seemed to move in the direction of greater traditionality, whereas women tended to become slightly more liberal.

Both men and women also became somewhat more traditional in their views about having children; the proportions saying they would prefer to have no children decreased between the freshman and the senior year. That decrease was more marked among men (four percentage points) than among women (one and a half percentage points). The sexes were farther apart on this issue as seniors than as freshmen, though the final difference was too slight to suggest a potent source of conflict.

Differences between the sexes with respect to women's having full-time careers were apparent for each class, however. Moreover, during the undergraduate years, women became more inclined to want a full-time career (from 67% of the freshmen to 72% of the seniors), whereas the men who said they wanted their partners to work full-time remained roughly constant (47% of the freshmen, 48% of the seniors). Interestingly, over time, men became somewhat less likely to opt for full-time careers for themselves (94% of the freshmen, 90% of the seniors) and more likely to say they would prefer to work part-time or not to be employed at all.

Differences in the sex-role ideologies of women attending single-sex colleges and those attending coeducational institutions are shown in Table 14. The picture is mixed. Overall, those attending single-sex institutions were somewhat more traditional than their sisters in coeducational institutions in that they were slightly more likely to say that they would prefer to be married and less likely to say that they would prefer to be living with someone of the opposite sex; but they were less traditional in that slightly larger proportions said they would prefer to be single and that they did not want children. Differences between the two groups with respect to wanting full-time or part-time careers were very slight.

Besides these basic differences, the two groups of women followed somewhat different developmental patterns. For instance, though as freshmen they were more likely to opt for remaining single, senior women at coeducational institutions were less likely than those at women's colleges to indicate this preference; in one sense, they became more conventional. But they moved in the direction of greater liberality with respect to living with someone of the opposite sex (an increase of about four percentage points over the undergraduate years), whereas those at women's colleges changed little on this point. Those at women's colleges also became more traditional over time in their attitudes toward having children: 28% of the freshmen, but only 21% of the seniors, said they did not want children. Women attending coeducational institutions were slightly more likely as seniors than as freshmen to express this preference. Finally, both groups moved in the direction of more liberal attitudes toward employment: the proportions saying they wanted to be employed full-time in 10 or 15 years increased about four percentage points for both groups.

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VI. ACTUALIZERS, DEPENDENTS, AND LONERS

For the purpose of getting a more comprehensive and precise picture of the importance of certain dimensions involving the college environment and the student's experiences in college, a number of scales were developed from items on the survey questionnaire. In developing each of these scales, we first identified the items that appeared to tap the same quality or dimension and then scored each item in the appropriate direction in order to arrive at a total score on the scale for each respondent. We next correlated each scale score with its individual items and with the total scores for every other scale. On the basis of these intercorrelations, we refined the scales to be used in the analyses.

The two scales of concern here are Relatedness and Autonomy. The first includes items that reflect an interest in, and an emphasis on, interactions with peers, faculty and administration: e.g., placing a high value on conversations with peers, feeling comfortable working with members of the opposite sex, having frequent contacts with faculty members. The second scale includes items that reflect independence, ability to work alone, and confidence in one's own choices and judgments: e.g., doing independent study, feeling free to disagree with a faculty member, rating oneself high on originality, choosing a career that provides considerable autonomy.

In addition, students were classified into three groups on the basis of their scores on both Relatedness and Autonomy. Since high scores on both scales probably represent healthy personal development for college students, these people, for simplicity, are labeled the Actualizers. The second group consisted of those scoring high (in the top 20%) on Relatedness but low (in the bottom 20%) on Autonomy; they are labeled the Dependents. People in the third group, those low on Relatedness but high on Autonomy, are labeled the Loners (25% of the total sample). Only 5.3% were Actualizers. Obviously a large part of the sample (i.e., those scoring in the middle ranges on the two scales) were left out of this analysis.

As Table 15 indicates, women tended to score high on Relatedness, but low on Autonomy, whereas the opposite pattern was found for men. A slightly higher proportion of whites (5.6%) than of non-whites (3.7%) belonged to the Actualizers, but the racial/ethnic composition of the other two groups was roughly the same.

Over the undergraduate years, the proportions scoring high on both Relatedness and Autonomy increased steadily, from only 2.6% of the freshmen to 9.8% of the seniors. It is impossible to know from the data whether this increase is attributable (at least in part) to the college experience or whether it is simply a matter of maturation. Whatever the explanation, such a positive development is encouraging. The proportion of Loners also rose steadily, from 19% of the freshmen to 35% of the seniors, whereas the proportion of Dependents dropped, though only slightly, from 41% of the freshmen to 35% of the seniors. The overall implication is clear: students tend to become more independent over the college years, although they do not necessarily become more gregarious and more comfortable in their interpersonal relationships.

There were some interesting differences in the composition of the three groups by major field. For instance, those majoring in the arts were especially likely to be Actualizers (12%, versus 5.3% of the total sample) or Loners (36%, versus 25% of the total sample). Also more likely than average to be Actualizers were students majoring in history and civilization (who had some tendency to be Loners but not Dependents) and those majoring in

English (who were also less likely than average to be Loners). Very few engineering or physical science majors were Actualizers (1.9% and 3.7%, respectively), and the latter were also somewhat scarce among Dependents. Students majoring in the social and behavioral sciences, on the other hand, tended to belong to the Dependent group. Only small proportions of students undecided about their majors were either Actualizers or Loners; this finding makes good sense in that an inability to make up one's mind about major field could in many cases indicate general indecisiveness and a lack of confidence in one's own judgment: in short, a lack of autonomy.

The same interpretation does not hold true, however, for those who said they were undecided as to what degree they would get. An unusually large proportion of these people (14%) were Actualizers, although they also had a greater-than-average tendency to be Dependents (43%) and Loners (29%). Those who aspired to no more than a baccalaureate or master's degree were relatively likely to be Dependents and relatively unlikely to be Actualizers or Loners, whereas those aspiring to the doctorate were more likely than average to belong to these two groups, and those aspiring to other advanced (presumably professional) degrees were unlikely to be either Actualizers or Dependents.

The higher the student's grade-point average, the more likely that student was to be a Loner or an Actualizer (except that relatively small proportions of students with the very highest grades, A or A+, belonged to the latter group) and the less likely to be a Dependent. Thus, superior academic ability (at least as reflected in college grades) would seem to be associated with high scores on Autonomy but not necessarily on Relatedness.

The Actualizer group included relatively large proportions of students expressing worries about the future and about interpersonal matters but relatively few concerned about academic problems. Dependents were characterized by academic and personal worries but not by worries about the future. Loners were somewhat more likely than average to worry about academic matters but not about interpersonal matters.

Those students who reported having had sexual relationships were somewhat over-represented among Actualizers, whereas those who had not had such relationships were slightly more likely than average to be Loners.

Though not shown in the table, women attending single-sex colleges were somewhat more likely than those attending coeducational institutions to score high on Autonomy. The two groups were about equal, however, in their scores on Relatedness.

SUMMARY AND IMPLICATIONS

At the beginning of this paper, we raised three questions about college students. First, how do men and women compare in their self-concepts, opinions and values, worries, interpersonal relationships, sex-role ideologies, and degree of relatedness and autonomy? Second, how do students of both sexes change in these areas over the college years? Third, how are different college environments -- namely, those of single-sex and coeducational institutions -- related to the development of women? This section summarizes the findings within the framework of these three questions and points to their implications for institutional administrators and others concerned with the development of undergraduates.

Comparison by Sex

The men and women in our sample shared many characteristics. They were relatively indifferent to politics, and they were inclined to worry about the same things. The majority wanted to get married and have children. Approximately equal proportions saw themselves as socially self-confident, motivated to achieve, assertive and artistic. Their general attitudes toward premarital sexual relationships were similar, as were their friendship patterns.

Nevertheless, important differences between the sexes emerged, many of them consistent with sex-role stereotypes. For instance, women were somewhat more altruistic and more inclined to say that, at present, they valued friendship over a sexual relationship. At the same time, they were more likely than men to be currently involved in such a relationship and to take a more serious attitude toward it, in that fewer women than men reported having other sexual contacts outside the primary relationship, and more indicated that they assumed responsibility for contraception. The latter point has obvious implications with respect to the kinds of services and facilities provided by the institution. Men, on the other hand, were more pessimistic (as reflected in their greater tendency to say that the individual can do little to effect social change) and more cavalier in their attitudes toward, and behavior in, sexual relationships.

Even more striking were differences between the sexes in self-concept. Men were more likely to give themselves high ratings not only on "masculine" traits but also on "neuter" ones like academic ability and intellectual self-confidence. Their male self-image as competitive, original leaders possessing a variety of abilities is congruent with their relatively high scores on the Autonomy scale. In contrast, women were more likely to see themselves as strong in interpersonal dimensions (popularity with the same and with the opposite sex, understanding of others), and this self-image is confirmed to some extent by their tendency to score higher than men on the Relatedness scale as well as by other data. For instance, both men and women regarded

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women as the more mature sex, and perceived maturity as probably a function of interpersonal and social skills. Further, women seemed more comfortable in their relations both with other women and with men.

Perhaps the greatest difference between the women and men in our sample -- and one that could well prove a source of conflict between the sexes -- involves sex-role ideology, especially attitudes toward the employment of women. Thus, two-thirds of the women said they wanted full-time careers, whereas only two-fifths of the men indicated that they wanted their partners to work full-time. Similarly, men were much more likely than were women to believe that the mothers of preschoolers should not work outside the home at all. In short, though men may be somewhat more liberal than women in their attitudes toward sexual relationships, they are definitely more traditional in their views of the "proper" role of wives and mothers.

Comparison by College Class

Nor does the college experience seem to mitigate these differences in sex-role ideology. Men were only slightly more likely as seniors than as freshmen to say that they would prefer their partners to work full-time, but the proportion of women wanting full-time careers increased between the freshmen and senior years. Men were also more likely to move in the direction of greater traditionality with respect to marriage: fewer seniors than freshmen said they would prefer to be single or living with someone of the opposite sex in 10 or 15 years. Women, on the other hand, were more likely as seniors than as freshmen to express a preference for living with someone outside of marriage. Both sexes, however, became less inclined over time to say that they did not want any children. Finally, at the time of college entry, women were more likely than men to report never having had a sexual relationship; by the senior year, however, this difference was virtually erased.

Comparing freshman and senior ratings on selected traits, we find that the self-concept of both sexes improved during the college years, with larger proportions of seniors than of freshmen giving themselves top marks on intellectual and social self-confidence and on academic ability. Even as seniors, however, women were markedly less likely than were men to give themselves high ratings on these three traits, and the proportion seeing themselves as highly motivated to achieve actually declined, a finding that merits the attention and concern of educators. Faculty members and administrators should also be aware that college students (especially men) seemed to experience a "sophomore-year dip" in self-esteem and that a somewhat similar "crisis in idealism" may occur among juniors.

Other changes that took place during the college years were in expected directions. Religion declined in importance for both sexes. Worries about academic and interpersonal matters became less common, and worries about the future much more so, with two-fifths of the seniors reporting such concerns. Perhaps college officials can develop intervention mechanisms to alleviate some of this anxiety; for instance, better information on work and other options might help to reduce stress among those about to graduate.

Finally, students tended to become more independent and self-sufficient over the college years (as measured by scores on the Autonomy scale), but an increase in involvement with, and interest in, other people (as measured by scores on the Relatedness scale) was by no means universal. Perhaps academic institutions need to give greater attention to the interpersonal needs of their students, by (for instance) providing them with more opportunities to interact not only with their peers but with faculty and staff as well.

Comparison by Institutional Type

Overall, women attending single-sex institutions seemed similar to those attending coeducational institutions in many ways, including their self-ratings of academic ability, mathematical ability, competitiveness, popularity with the opposite sex, and social self-confidence; their perceptions of the importance of religion in their lives; their tendency to choose a career that would allow them to contribute to society; and their desire for a full-time career. Their mean scores on the Relatedness scale were similar, although women at single-sex institutions tended to score higher on Autonomy than those at coeducational institutions.

To look just at total proportions without regard to college class, however, is to miss some other important differences between these two groups of women. These differences were especially visible in the area of self-ratings. As freshmen, those at women's colleges tended to have a much more positive self-image than did those at coeducational institutions, but by senior year this situation was reversed, with larger proportions of the latter group rating themselves high on virtually all traits. Thus, women at coeducational institutions seem to have progressed further in the college years, though to what extent their development can be attributed to the institutional environment is not clear. (It bears repeating that both groups of women declined in their motivations to achieve; in addition, they became less likely to see themselves as competitive.)

The other most noteworthy difference between these two groups of women involves their attitudes toward sex and sex roles. Those at women's colleges were generally the more traditional, being less likely to indicate approval of premarital sex, more likely to value friendship over sexual relationships, and more likely to favor getting married and having children. Indeed, on only two points did they seem nontraditional. First, like their counterparts in coeducational institutions, most of them wanted a full-time career. Second, similar proportions of both freshmen and seniors (about 5%) said they would prefer to be single (rather than married or living with someone) in 10 or 15 years; among women in coeducational institutions, the proportion expressing such an opinion declined over the college years, whereas the proportion saying they would prefer to be living with someone of the opposite sex increased from 8% to 12%.

As was pointed out earlier, the research design and methodology were such that no causal inferences can be made about the relationship between institutional type and student involvement. Nonetheless, our findings in this area deserve some comment insofar as they seem to contradict the belief that women in coeducational institutions suffer some disadvantage because they must compete with men. Clearly, the characteristics of women entering single-sex institutions differed from those of women entering coeducational institutions, with the former having a definite edge with respect to self-concept. By the senior year, however, these differences were no longer apparent; indeed, women at coeducational institutions seem to come out with more favorable self-images. Perhaps this apparent difference in development is simply a function of institutional size: because coeducational institutions are usually larger than women's colleges, they may offer their students, women as well as men, more opportunities to develop as leaders and to gain self-confidence in a variety of areas. Whatever the explanation, the question is one that deserves serious attention from researchers, college officials, and educational policy-makers at all levels.

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Table 1

Self-Ratings, by Sex[a]

Trait	Women	Men
Academic ability	30.9	45.4
Artistic ability	10.6	9.6
Assertiveness	15.5	15.0
Athletic ability	8.2	13.5
Competitiveness	11.0	22.0
Drive to achieve	29.3	31.0
Leadership ability	20.2	24.2
Mathematical ability	12.5	28.4
Mechanical ability	4.6	14.6
Originality	20.0	24.0
Physical attractiveness	13.8	11.0
Political conservatism	3.6	6.5
Political liberalism	11.8	11.7
Political radicalism	5.1	5.8
Popularity with same sex	12.5	9.0
Popularity with opposite sex	13.6	8.3
Self-confidence (intellectual)	20.9	32.3
Self-confidence (social)	16.2	14.9
Sensitivity to criticism	20.7	13.8
Stubbornness	17.7	14.7
Understanding of others	45.8	35.3

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[a] Proportions rating themselves in the top 10 percent on a trait "compared with the average student of your own age."

Table 2

Developmental Changes in Selected Self-Ratings, by Sex[a]

Trait	Freshmen		Sophomores		Juniors		Seniors	
	W	M	W	M	W	M	W	M
Intellectual self-confidence	20	31	22	29	21	35	22	36
Social self-confidence	15	15	14	11	19	15	19	19
Academic ability	29	44	28	42	31	47	38	51
Drive to achieve	33	29	28	33	29	30	29	34

W = Women
M = Men

[a] Proportions rating themselves in the top 10 percent on a trait "compared with the average student of your own age."

Table 3

Selected Self-Ratings of Freshman, Senior, and All Women,[a]
by Institutional Type

Trait	Women's Colleges			Coeducational Institutions		
	Freshmen	Seniors	Total	Freshmen	Seniors	Total
Academic ability	34.0	36.8	33.2	30.5	42.8	34.1
Assertiveness	17.7	19.1	18.4	15.1	16.0	14.5
Competitiveness	16.7	11.8	13.0	12.6	10.4	11.2
Drive to achieve	36.0	30.5	32.1	32.5	28.8	29.3
Leadership ability	21.8	21.8	24.5	15.7	22.6	18.4
Mathematical ability	14.2	12.5	12.6	12.0	16.5	13.5
Originality	20.7	21.1	23.0	15.8	19.8	19.1
Popularity with same sex	14.7	15.2	16.0	8.0	16.2	11.0
Popularity with opposite sex	11.9	13.2	13.7	13.2	15.4	13.4
Intellectual self-confidence	21.1	19.7	23.0	19.0	24.3	20.5
Social self-confidence	15.8	13.8	16.6	13.5	19.0	15.2
Understanding of others	40.2	48.7	43.9	46.3	51.0	47.0

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[a] Proportions rating themselves in the top 10 percent on a trait "compared with the average student of your own age."

Table 4

Developmental Changes in Opinions and Values, by Sex

	Freshmen		Sophomores		Juniors		Seniors		Total	
	W	M	W	M	W	M	W	M	W	M
People my age of the opposite sex usually seem less mature than those of my own sex [a]	17.0	2.0	18.3	1.4	17.5	0.3	23.9	1.3	19.0	1.3
Religion is less important to me than it used to be [a]	14.6	18.4	20.8	24.1	25.2	24.3	21.6	25.9	20.2	23.1
Realistically, an individual can do little to bring about changes in our society [a]	6.0	14.2	7.7	7.4	6.6	12.6	5.5	10.0	6.4	11.2
Can make an important contribution to society [b]	63.5	58.4	63.5	62.6	61.9	57.1	67.7	56.5	64.0	58.5
Can be helpful to others [b]	71.4	65.0	74.1	66.3	70.1	63.7	71.8	66.3	71.9	65.3

W = Women
M = Men

[a] Proportions checking "strongly agree."

[b] Proportions indicating the factor was "very important" in their choice of a long-range career.

Table 5

Opinions and Values of Freshman, Senior, and All Women, by Institutional Type

	Women's Colleges			Coeducational Institutions		
	Freshmen	Seniors	Total	Freshmen	Seniors	Total
People my age of the opposite sex usually seem less mature than those of my own sex [a]	19.8	27.7	21.5	13.2	21.8	16.9
Religion is less important to me than it used to be [a]	12.0	20.9	19.0	15.7	20.3	19.7
Realistically, an individual can do little to bring about changes in our society [a]	3.9	4.0	5.1	6.5	5.3	5.8
Can make an important contribution to society [b]	65.7	62.9	63.6	62.2	68.6	63.8
Can be helpful to others [b]	70.3	68.2	69.9	72.2	74.4	73.2

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[a] Proportions checking "strongly agree."

[b] Proportions indicating the factor was "very important" in their choice of a long-range career.

Table 6

Types of Worries, by Selected Student Characteristics

	Worries			
	Future	Academic	Inter-Personal	Personal
Sex				
Men	32	26	18	12
Women	31	30	16	13
Class				
Freshman	25	35	20	11
Sophomore	25	31	18	14
Junior	37	27	15	11
Senior	40	18	14	15
Race/Ethnicity				
White	32	27	18	13
Nonwhite	30	35	11	10
GPA				
A or A+	38	19	17	16
B or less	28	36	13	11
Major				
History and civilization	28	20	20	18
English	29	24	19	14
Social and behaviorial sciences	32	30	15	11
Engineering	30	32	17	10
Physical sciences	36	28	16	10
Biological sciences and medicine	36	32	13	10
Arts	36	23	16	15
Undecided	21	40	16	13
TOTAL	32	28	16.5	12

Table 7

Types of Worries Expressed by Freshman, Senior, and All Women, by Institutional Type (in percentages)

Type of Worries	Women's Colleges			Coeducational Institutions		
	Freshmen	Seniors	Total	Freshmen	Seniors	Total
Future	25.4	39.5	34.0	20.2	42.4	27.4
Academic	36.1	19.1	29.1	36.1	16.7	29.1
Interpersonal	15.6	10.1	13.8	21.7	13.9	18.6
Personal	12.7	12.5	11.5	11.6	15.9	14.4

Table 8

Friendships, by Sex
(in percentages)

	Women	Men
Number and sex of close friends		
Women Friends		
2 or less	19	47
5 or more	32	11
Men Friends		
2 or less	43	22
5 or more	14	35
More time spent with:		
Women friends	43	14
Men friends	21	57
About equal	35	29

Table 9

Activities With Friends, by Sex (in percentages)

Type of Activity	Women				Men			
	Same Sex	Opposite Sex	Both	Neither	Same Sex	Opposite Sex	Both	Neither
Discuss academic or intellectual issues	7	4	87	.7	13	2	83	1
Discuss political/ social issues	6	7	83	3	17	1.7	78	3
Discuss emotional or personal problems	42	4	52	2	23	19	53	5
Go to dinner or lunch together	17	5	76	.2	17	11	71	1
Go to movies, plays, concerts	10	13	75	.4	9	23	66	2
Study	22	4	54	19	15	4	50	31

Table 10

Attitudes, by Sex[a]
(in percentages)

	Women	Men
Living in a coeducational dorm makes it easier to have an active social life	25.0	35.0
Living in a coeducational dorm makes it easier to have friends of the opposite sex	46.0	47.0
A couple should live together for some time before deciding to get married	27.0	25.6
A sexual relationship has a positive impact on my academic performance	10.0	13.2
It is important to have sexual relationships before marriage	33.0	34.0
Two people should know each other really well before becoming involved in a sexual relationship	42.0	19.0
In my life right now friendship is more important than a sexual relationship	35.0	23.0

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[a] Proportions checking "strongly agree."

Table 11

Women's Attitudes Toward Sexual Relationships[a] by Institutional Type

	Women's Colleges	Coeducational Institutions
A couple should live together for some time before deciding to get married	19.7	35.4
A sexual relationship has a positive impact on my academic performance	8.2	12.8
It is important to have sexual relationships before marriage	29.0	38.5
Two people should know each other really well before becoming involved in a sexual relationship	52.0	36.5
In my life right now friendship is more important than a sexual relationship	44.0	30.9

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[a] Proportions checking "strongly agree."

Table 12

Preferred Future Life Patterns, by Sex[a]
(in percentages)

Preferred Life Pattern	Women	Men
Single	4.5	4.9
Married	80.5	75.8
Living with a person of opposite sex	9.0	13.2
No children	20.0	21.0
Full-time career	68.0	89.6
Part-time career	28.0	6.7
Not employed	1.5	1.1
Partner employed full-time	80.0	40.0
Partner employed part-time	7.4	27.4
Partner not employed	.4	5.9

Attitudes Toward Mother's Working While Children Are Young

Children's	Men			Women		
Ages	Not working	Full-time	Part-time	Not working	Full-time	Part-time
Infancy	76	3	12	57	6	28
Ages 2-5	48	9	36	27	16	50

Note: Percentages do not add to 100 percent because some response categories are not shown.

[a] _Future_ was defined as "ten to fifteen years from now."

Table 13

Developmental Changes in Future Life Patterns, by Sex (in percentages)

Preferred Life Pattern	Freshmen		Sophomores		Juniors		Seniors	
	W	M	W	M	W	M	W	M
Single	5.6	6.6	4.6	6.1	4.2	3.9	3.5	3.0
Married	82.5	75.1	82.0	75.5	79.6	78.3	82.8	78.5
Living with a person of opposite sex	8.8	15.1	9.6	14.3	10.8	12.3	10.2	11.7
No children	22.0	22.8	22.2	25.0	18.6	20.3	20.5	18.8
Full-time career	66.9	93.7	67.3	89.7	69.2	90.2	71.6	89.7
Part-time career	29.4	5.7	28.0	8.3	28.4	6.5	25.9	7.0
Not employed	2.1	0.6	1.8	0.7	0.8	1.3	1.3	2.0
Partner employed full-time	87.2	47.2	83.9	48.0	83.3	51.7	85.9	48.3
Partner employed part-time	5.1	31.2	7.7	33.3	10.4	31.0	8.7	38.4
Partner not employed	0.4	9.7	0.6	6.9	0.7	6.5	0	5.7

Note: Percentages do not add up to 100 because some response categories are not shown.

Table 14

Preferred Future Life Patterns of Freshman, Senior, and All Women, by Institutional Type (in percentages)

Preferred Life Pattern	Women's Colleges			Coeducational Institutions		
	Freshmen	Seniors	Total	Freshmen	Seniors	Total
Single	4.9	4.7	3.7	6.5	2.9	3.9
Married	83.9	83.9	82.0	81.4	80.8	80.8
Living with a person of opposite sex	8.8	8.1	8.6	8.4	12.1	10.7
No children	28.1	20.8	24.4	19.8	21.5	19.5
Full-time career	65.0	69.3	68.6	67.1	71.7	68.3
Part-time career	31.0	28.7	28.7	29.2	25.0	27.6
Not employed	3.4	1.3	2.2	1.5	1.7	1.4

Table 15

Relatedness and Autonomy, by Selected Student Characteristics
(in percentages)

Student Characteristic	Actualizers (High Relatedness, High Autonomy)	Dependents (High Relatedness, Low Autonomy)	Loners (Low Relatedness, High Autonomy)
Sex			
Women	5.5	41.2	22.5
Men	4.8	31.9	30.0
Race/Ethnicity			
White	5.6	37.9	25.0
Non-white	3.7	36.2	26.3
Year in College			
Freshmen	2.6	40.7	19.0
Sophomore	2.8	39.4	22.0
Junior	6.6	35.2	27.3
Senior	9.8	34.7	34.7
Major			
History and civilization	6.8	32.0	28.5
English	6.8	37.7	21.8
Social and behvioral sciences	5.3	41.8	23.8
Engineering	1.9	37.6	26.7
Physical sciences	3.7	31.0	26.3
Biological sciences and medicine	4.0	37.2	23.5
Arts	12.2	37.2	35.5
Other	4.9	35.0	25.2
Undecided	2.7	37.3	20.0
Planned Degree			
B.A.	3.5	41.7	21.7
M.A.	3.8	40.1	21.2
Doctorate	6.8	35.8	29.3
Other	4.9	25.6	25.6
Don't know	14.3	42.9	28.6

Table 15 (continued)

Student Characteristic	Actualizers (High Relatedness, High Autonomy)	Dependents (High Relatedness, Low Autonomy)	Loners (Low Relatedness, High Autonomy)
Grade Average			
A+, A	4.1	32.1	31.2
A-	8.2	34.5	30.4
B+	6.1	37.0	26.9
B	4.7	39.2	22.0
B-	2.1	40.8	20.6
Other	7.5	32.5	20.0
Type of Worry			
Future	6.1	33.5	25.7
Academic	3.0	41.2	27.3
Interpersonal	6.5	37.1	23.4
Personal	5.3	42.1	24.8
Sexual Status			
Virgin	1.6	34.0	28.5
Non-virgin	6.5	39.2	24.3
TOTAL	5.3	37.7	25.2

Note: Relatedness and Autonomy scores were developed from a number of items on the survey questionnaire. cutting points of high and low scores on the scales were developed empirically by classifying persons as follows: High = high 20% of population; Low = low 20% of population.

DECLARATIONS ABOUT THE FUTURE:

CAREER GOALS AND PLANS OF A COLLEGE GENERATION

Carole Leland

> "Vocational choice that comes too early in the individual's life may induce a kind of premature closure of the personality, an integration or 'adjustment' that, being supported by external agencies, may effectively prevent further expansion and differentiation." (Sanford, 1964, p. 16)

> "[Career choice] can be a gentle pull toward full development, a strangling conception of what the adult world demands, or a broken line of communication that leaves the young person with a sense of isolation and desperation." (Korn, 1968, p. 208)

> "The goal of facilitating appropriate career choice and placement of students is closely related to the goal of personal self-discovery." (Bowen, 1977, p. 43)

Men and women come to college with varying degrees of self-assessment and acceptance. College is a vehicle, crude as that may seem, for their progression toward goals and values which they have at least tentatively identified. Progression is an important concept because it emphasizes that college represents experiences which do not necessarily solidify choices or lock persons into single lifestyles or roles. Rather individuals move along certain intellectual, social, and personal pathways which shape their futures and often enlarge their vision and aspiration. Declarations along the way, such as majors or occupational preferences or achievements, importantly affect how institutions realize their own purposes and perhaps modify their emphases.

In this study of college students, we asked them to talk about what they wanted in their futures, how they were progressing toward their goals, and what or who seemed to be involved in their decisions. We took for granted

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the idea that colleges and universities experience tensions, sometimes downright tears in their institutional fabric over the purposes of education, especially the liberal-vocational-professional balances that have been so central to criticism and self-analysis in higher education. But we were drawn to some challenges which Bowen and his associates espoused in a recent volume, "The goals of higher education are concerned with the development of the full potentialities of human beings and society," and equally appreciative of their caution, ". . . there is need for educators to sort out priorities among goals, to recognize that there are trade-offs among them, and to be realistic about what can and cannot be achieved with the resources that are likely to be available." (Bowen, 1977, p. 54)

Career choice and the implementation of individual aspiration and values in a work life reflect very well the goal complexities and institutional soul-searching those sentiments imply. Aligning skills, interests and inclinations with fields, opportunities and environment is sometimes presumptious, let alone precarious. It is no wonder that in some three decades of theoretical thrashing about we still seem to be searching for explanations for what persons choose to do, and still feel, as institutions, that we have a commitment to help them do it. We know the college expereince represents, stimulates, and enables critical decisions that profoundly affect people. Occupational, personal and family roles, lifestyles, self-awareness and esteem, geographic and social mobility are all strongly affected by what happens in college -- how students achieve, what they experience, who influences them, what they value or come to value, and how they and others view themselves. College students are expected to prepare themselves for places in a rapidly changing society, and to make choices which will maximize their self-fulfillment as well as their contribution to that society. And these expectations are the same whether a student attends full or part-time, is adolescent or adult, pays for or does not pay for education.

The statements which follow indicate how a group of college men and women have been sorting out their lives -- talents, interests, achievements, aspirations -- and planning their futures. For these students in six selective colleges, we want to indicate some patterns about future orientation, to suggest some institutional policy alternatives, and to raise some general issues about college as a vehicle that may help people progress.

The data represent self-reports of some 3000 college men and women in a college generation which spans graduating classes of 1978 through 1981. As part of the study questionnaire we asked a series of questions prefaced by "We realize that not everyone has made a firm commitment about the future, but we hope you will share some of your possibilities with us, even if they seem tentative or far off at the moment." We started with declarations of major or concentration, looked next at aspirations and plans for education and career, and finally, tried to assess some relationships among choices, perceived influences and experiences.

I. DECLARATIONS: EDUCATION AND CAREER PLANS

> "How I want it to be [in ten years] is I want to have a job that I enjoy, something to do with physics or math, let's say. Perhaps a nuclear physicist. I would like an enjoyable job first of all. I would like to be making quite a bit of money. I think if I could do that I would really please my family very much." (Interview, male, class of 1981, major undeclared, possibly physics or mathematics)

> [Ten years] "Hopefully be out of school by then. I figure either I'll be an engineer for some big company doing research, possibly go into teaching, but on a research or university level. I've considered

that but that would be a long way off. Possibly owning a small firm or whatever." (Interview, female, class of 1980, engineering major)

[Ten years] "I wish I knew. I was saying this summer I'm going to be looking into all kinds of fields, careers that are in rehabilitation medicine. I really don't know what things are available. I think I'd like to be working in a career. I don't plan right now to be a homemaker exclusively." (Interview, female, class of 1979, biophysics major)

Majors

Major or concentration choices show relatively traditional patterns for men and women in this study and the data show no significant differences among the six institutions or between coeducational and non-coeducational schools. Table 1 gives percentages of selected majors for men and women in the total sample and by class year. These patterns and trends emerge:

- Overall, for both men and women, the most popular majors were in social and behavioral sciences;
- Women were more likely than men to concentrate in social/behavioral sciences (1/3 of the group), history/civics, and English/language;
- Men more often declared engineering (1/5) or physical sciences, biology/medicine (1/4).

In addition to popularity of majors the figures indicate that within certain fields there were greater discrepancies between sexes. Women, for example, majored in larger proportions in English/language and the arts, whereas men concentrated in greater numbers in engineering/mathematics, physical sciences, and biology/medicine. Institutional variation seems not to be a matter of sex differences, but rather may represent a college's curricular emphases.

Class differences here represent cross-sectioned data for college graduating classes, 1978-1981. Although figures do not indicate actual shifts of students, they suggest patterns which should be studied longitudinally. There appears to be a drop-off, for example, in concentrations in history/civics, English/language and physical sciences after the freshmen or sophomore years, and increases in social/behavioral sciences, engineering/math and arts by the junior and senior years. Percentages stay approximately the same in biology/medicine in each class. What contributes to these patterns or what eventual outcomes they have cannot be concluded here, but the possible loss of talent to society, or loss of individual self-esteem, or some breakdown of the college system are all reasonable speculations which deserve greater scrutiny.

Degree Aspirations

The six institutions in the study represent not only selective admission standards, but also strong orientations toward professional preparation. It is not surprising therefore that these students aim high. Table 2 provides percentages for the total population and for each college. The data show:

- About half of the group anticipates earning a doctorate;
- Of the remaining 50%, a substantial proportion plan to achieve a Master's and only slightly over 10% expect to complete their education with the baccalaureate;
- Men intend to achieve the doctorate more than women, and conversely more women want to complete the Master's.

Differences among the institutions or between coed-non-coed designations are minimal. One additional piece of information students provided had to do with time tables. Forty-three percent of the men and 35% of the women indicated they would begin post-graduate study immediately after completing the bachelor's; 23% of the men and 25% of the women planned to delay graduate work for a year.

Career/Occupational Choices

Work appears to constitute a significant future commitment for these students. Almost all the men (90%) and a substantial number of women (68%) preferred a full-time career in ten to fifteen years, and only slightly over one percent of both sexes expected not to be employed at all.

Tables 3, 4, and 5 categorize responses to the survey question, "What do you see as your future career or occupation?" The data, clustered by career fields, accentuate several patterns:

Common preferences. Men and women combined, across institutions and majors, make *business/management*, *law*, and *medicine* the three most consistently popular fields.

Sex differences. Career choices emphasize traditional male and female roles: More men than women preferred business/management, law, medicine, and engineering/computer science. Women in larger proportions chose arts/media, allied health, and to a lesser extent social/behavioral sciences (Table 3).

Institutional variation. Only two tendencies distinguished coeducational from non-coeducational schools. Students from the two women's colleges preferred arts/media fields most often, and chose engineering/computer science in significantly smaller numbers than either males or females from the coed schools.

Group averages by coed and non-coed institutions show no significant differences in career choices (Table 4). When the six institutions are considered separately, however, some variability emerges (Table 5). Men and women at the college designated S1, for example, chose medicine more often than students at other schools, and law, arts/media, and business/management followed in rank order. But in college S2, preferences showed allied health, medicine, business/management, and natural sciences as most popular. These figures suggest that career inclinations may reflect some institutional differences and curricular priorities -- more than the sex composition of a student body. Colleges select particular kinds of students and emphasize particular fields of study. These findings may support the notion of "progressive conformity," or changes in student interests in the direction of the dominant emphasis of an institution (Astin and Panos, 1969).

Shifts. What may be most interesting and beg further inquiry about these career choices are the patterns that appear from analyzing male/female data for each class in the 1978-81 college generation (Table 6). From a relatively even distribution of the ten career clusters between men and women, each successive class shows trends toward more traditional sex-typed preferences.

In the freshmen year, the only large gap appears when more men than women elect for engineering and computer science. In the sophomore year, males widen the margin in those fields and also choose medicine more frequently; females, at the same time, begin to show greater preferences for arts/media. The trends continue for the junior cohort and males also increase their selection of business/management, females of allied health. Finally, in the senior year the proportions remain or increase in the same fields and one new distinction emerges as more males than females pick law.

These are, of course, cross-sectional data and are only suggestive of what may be individual changes in career or occupational choices. In this snapshot of a college group, however, it does appear that women move from the freshmen year to senior status with diminishing commitments to the male-dominated career fields: business/management, medicine, engineering/computer science and law. And in general, they commit themselves to allied health and arts/media more frequently than men. This pattern corresponds with other studies of college students (e.g., Bisconti, 1975; Ochsner and Solmon, 1979).

One final point which can be made about shifts or changes in career choice: in the total sample 44% of the women reported their career plans "changed in the last year," compared with 38% of the men. This underscores the dynamic nature of future-related decisions during the college years and argues once again for further exploration into these dynamics.

The work setting students prefer indicates another dimension of their reflections about the future. Table 7 indicates that students prefer to be self-employed -- across institutions, by students in either coed or non-coed schools, and within each class status. ("Self-employed" included a professional practice, free-lance artist or consultant, or some type of individual or family business.) Men consistently selected self-employment more than women, almost half compared to one-third of the combined responses. Whether students expect such independent employment situations should be better established. Certainly their likelihood of actually being so autonomous, in such high proportions at least, is minimal. Whether women are more realistic, or less ambitious, or perhaps more firmly committed to areas in health or research is also unclear. Exploring these questions might help colleges to see more explicitly their role in helping students to understand work environments and make realistic future commitments.

II. PROGRESSION: INFLUENCES AND EXPERIENCES

> "I don't really know [in ten years]. We used to worry about it a lot but now I've just pretty much taken the attitude that I will let the chips fall where they may. I would like to have a job, doing something meaningful, not necessarily -- I don't care whether I'm making $60,000 a year or something. I think having something where I'm concerned with the environment and helping protect the environment is more important than monetary aspects." (Interview, male, class of 1979, geology major)

> "I'd like to be working, I'll put it that way, ten years from now in a challenging position in the art world, perhaps teaching art history at a university. Or else working in a museum, working on exhibits or working in the education department . . . . I'd like to be married by then and to be starting a family. I haven't figured out quite how that's going to work out. I don't want to as soon as I get my Ph.D. -- get married and go home and sit with it." (Interview, female, class of 1978, art history concentration)

We have discussed in the previous sections some declarations students make about their futures and have suggested a little about the dynamics of their decisions. Here we want to highlight some factors which seem to shape and affect those decisions, especially factors which are closely related to college, and to personal expectations and values.

Relationship between major and career choice

We assume that the field a student concentrates in has some bearing on what he does in the future. Cross-sectioned data, in this case four college classes at one point in time, do prevent tracking individuals over the course of their college experience. We can, however, identify relationships by examining the stability/instability of major and career associations.

Tables 8 through 11 present correlations between seven majors and ten career fields. Correlation coefficients for significant positive relationships are boxed within each class. The patterns for the four classes consistently show (1) those students majoring in physical sciences and biology/medicine choose a career in medicine; (2) those majoring in arts select careers in arts/media; (3) in all other majors students shift choices among a variety of careers. For example, history/civics majors regardless of class are more likely to select the fields of business/management and law; freshman social/behavioral science majors are most likely to select that as their career field, whereas sophomores, juniors and seniors in the same major show significant choice relationships with engineering/computer science. The great variation in major/career choice relationships suggest some serious need to examine whether majors are truly designed for particular careers and, if so, why the numbers of students drop off, in some cases significantly, from particular careers? The findings here, though inconclusive, provide strong impetus for better tracking procedures in majors and continued analysis of career field requirements and practices. The implications for advising, for the potential of helping men and women make realistic and satisfactory career choices and for adequately fulfilling the purposes of particular major areas are evident.

Influential People

Students in all six institutions affirmed the strong role families play in career decisions. The influence appears to diminish between the freshman and senior years, but nevertheless about 40% of these men and women viewed their families as "very influential" in their plans. Professors (male/female combined) ranked next in influence, but for the total population were only acknowledged as "very influential" by approximately 14% -- the same percent reflecting peer influence (Table 12).

A percentage of students either did not acknowledge persons in these categories as influential or volunteered a fourth category, the "self." The question is complex since factors other than people influence decisions, or students do not consciously attribute influence beyond themselves, or may find this an area difficult for self-disclosure. The data do suggest, however, the important interaction of factors that sometimes represent and sometimes do not represent the college experience. Specifically, these responses highlight:

- The substantial influence of the family;

- The relatively modest and equally weighted influence of professors and peers;

- Higher percentages reported by women for all categories of influence, perhaps an indication of a female acceptance of self-disclosure more than males (discussed in another paper in this report);

- Slightly higher reports of influence by non-coed students compared to the coed institutions;

- Although not in great numbers, a tendency for students to attribute influence to themselves which increases in reports by upper classes compared to freshmen and sophomores.

Perception of Professors

Another way to look at academic influences on students' planning is to ascertain in what ways, perhaps less direct ones, professors are perceived to have had an impact on decisions. In Table 13, students estimated the percentage of professors they could place in each of six categories which had at least some relation to career or educational directions. Men and women, across institutions and by class standing, viewed their professors as demanding high quality work, certainly a contribution to their competence for future work or study. About a third of the students reported 50% or more of their professors:

- Offered helpful advice;
- Interested them in his/her field;
- Taught them important skills.

At the same time, about a third of the students reported only 10% or less of their professors would fall into the same categories.

More dramatic and perhaps more relevant to this background paper are the data as highlighted in Table 14. While substantial numbers of students feel professors interest them in their fields, few students (3%) acknowledge

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or perceive that half or more of their faculty "helped me make a career decision." Almost 50% of the students could not report any faculty who had provided that help.

These data have to be interpreted cautiously and tentatively in light of earlier suggestions about what is perceived, actually transpires, or is acknowledged. They do, however, deserve further inquiry because they raise questions not only about what roles professors should and can play in student decisions, but also about potential incongruity between faculty and student expectations. The fact that these responses show no sex, class, or institutional differences suggests some more generalizable explorations are possible.

Career Values

Work worlds focused on ideas and people are most important to the men and women in this study (Table 15). In almost equal numbers and the same order, they most value:

1. Work with ideas
2. Helpful to others
3. Work with people I like
4. Contribute to society.

Both sexes espouse similar values and view avoiding pressure as least important in their work lives. They want steady progress and autonomy in their careers but less than they seek intellectual and altruistic outlets. Men were slightly more likely than women to see materialistic concerns -- pay and prestige, for example -- as very important. Similarly, women were slightly more likely to indicate altruistic goals such as being helpful to others and contributing to society.

Differences among the six institutions were minimal. Coed and non-coed colleges showed slight variation, not in ranking importance of goals but in the magnitude of responses. Non-coed students tended to emphasize their commitment to work with ideas and help to others slightly more than men and women in coed institutions (Table 15 A).

Career-Related Experiences, Actual

In the past decade colleges have shown increasing interest in experiential learning and new linkages between work and education. In this study we looked at the extent to which students had career-related experiences, how they assessed them in relation to career decisions, and, in retrospect, to project what might have helped in those decisions. Table 16 indicates that a great majority of these students have had some exposure to the world of work, primarily through paid off-campus work, on-campus work or volunteer activities. Over half of the students report some experience with campus counseling services.

Far fewer students have experienced activities which are usually more structured and intensive in relation to careers: off-campus internships, courses which include field work, and teaching or research assistantships. What stands out is not only how few students experience these opportunities, but also how men's and women's participation differs. More men have held assistantships; more women have served internships and done field work. Since women more than men feel less confident about their preparation for graduate school, and assistanthips usually offer excellent preparation for advanced study, some attention needs to be given to these data.

In all institutions about one-fourth of the students viewed off-campus work as very helpful in career planning, but on-campus work seemed of little assistance (Table 17). This may reflect the necessity of assigning work-study monies in relatively menial though necessary campus jobs which are incongruent with the professional aspirations of students.

Students valued most highly their own "enthusiasm and interest developed in the course of your studies," and least of all the counseling services. Considering that over half of the men and women had some experience with those areas, these perceptions deserve further assessment and re-thinking, although it is not uncommon for students to report stereotypic views of non-academic services.

Women hold stronger feelings about the usefulness of all these experiences; this is especially true in volunteer work and the impact of their studies. Again, men in the study may have been less willing to disclose their need for experiences in making decisions.

Non-coeducational students found volunteer work of greater value than men and women in coed schools, a finding that may reflect the strong humanistic and service traditions of the women's colleges. The same non-coed women assessed their courses of study as more helpful than did the coed students.

Career-Related Experience, Projected

We asked students what would be, or would have been, helpful in making career and educational plans (Table 18). Despite variations within and among the institutions, students affirmed the desirability of certain experiences:

- Internships were viewed as most potentially helpful;
- Non-coed students more than coed men and women projected career planning from professors as helpful;
- Almost 50% of the men and women, more in the coeducational schools, underscored "courses with better career-related objectives";
- Women, in each class and for each area, indicated more than men that these provisions would be helpful.

Although not included in this institutional analysis, 49% of the men and 52% of the women in the total sample affirmed that "greater contact with alumni/ae in various career areas" could be helpful. This deserves special mention in view of the strong alumni/ae commitment which comes out of the report paper on Brown graduates.

III. SUMMARY: ISSUES AND INSTITUTIONS

> "In my opinion, most colleges and universities in America have been remiss in accepting and in implementing education, as preparation for work, as a major institutional goal." (Hoyt, 1977, p. 25)

> "The teaching faculty ultimately will determine whether or not the career education concept is to be effectively adopted, no matter how ardent the expression of institution policy. Both by attitude and teaching performance they can either derogate or enhance the administrative or student services aspects of the plan. They can dismiss the administrative services as irrelevant to their teaching, or they can extend themselves to engage supportively and harmoniously with student services." (Marland, 1978, p. 44)

The findings from this study profile college students at the end of the 70's. While the general picture they present is not surprising, nor inconsistent with the values and traditions of the institutions they attend, some issues and implications emerge which merit policymakers' review. Our analyses could provoke and guide policy discussions, aid in evaluating present academic and administrative practices, and suggest appropriate new research.

Overall, these are students with high aspirations for advanced degrees and professional studies. (Previous research confirms this pattern for students in similarly selective colleges. Astin, 1978.) Men and women alike show common career preferences for the professions of business, law, and medicine. They expect to work, and women intend to combine marriage and a career. Families constitute the most distinctive personal influence in their career decisions. Although they generally prefer the idea of self-employment, these students most value work with ideas and for people. (Patterns show persistence of the altruism of the 60's and the de-emphasis of materialism. These expressions are consistent with some recent studies, e.g. Ochsner and Solmon, 1979, and are somewhat contradictory to others, e.g., Astin, 1978.) On the disquieting side, these data, and the quite representative interview quotations, indicate the hesitant, tentative nature of future aspirations, and students' lack of knowledge about the world of work. Despite similarities across institutions, between sexes, and among four college classes, some special patterns, often subtle, provoke further question.

Male/Female Differences

- Career choices and shifts in major emphases show tendencies toward traditional sex-related roles and fields;
- Women more often than men seem to put a ceiling on their education plans at the Master's level;
- Women more often report influences on their career decisions and more strongly affirm the need for more help in making choices or experiences related to work;
- Men more often hold teaching or research assistantships, which frequently are highly relevant to graduate school acceptance and success.

When considered with other study findings related to women -- e.g., assessments of self-esteem, leadership experience, confidence in quantitative skills, and academic achievement -- these analyses suggest some special needs and wishes on the part of women students. The question is whether institutions find it appropriate to enter into the arena of changing student values and helping them to better match talents and opportunities, build self-confidence and esteem? Are they willing to commit resources for special programs, work experiences, or professional personnel to address the problems implied? The seventies do not seem to have fully realized expectations for freer choice patterns for either men or women. Intervention seems called for and the college environment seems a logical place for that intervention.

Academic Influences

- Students view professors as demanding high quality work, interesting them in their fields, and teaching them important skills;
- Professors seldom are viewed as very influential or helpful in career decisions, but students strongly support the idea that such professorial help would be helpful;
- Courses of study generate enthusiasm and interest which are helpful in future planning, but students would also find better career-related objectives useful;
- While majors and career choice relationships are stable for some areas, especially the sciences and health-related majors, students in all other majors make considerable shifts in career choices over the four class years.

What students seem to be voicing poses a dilemma: professors obviously contribute to future plans in strategic ways, yet from a student viewpoint they might extend their contributions further -- to a different emphasis in advising, for example, or to more conscious career emphases in classes. The question is whether those are proper priorities for academics and can they accomplish something significant to students by shifting priorities? And, can scholars and teachers trained in highly traditional intellectual pursuits engage in helping with work place questions and alternatives? In sum, should, could, would professors accept roles more congruent with the preferences these students express?

The question of major/career choice relationships needs further study, especially longitudinal research. In addition, institutions may need to examine more closely the degree to which they intend majors and career choices to be closely associated, and the extent to which that expectation is held by students as well. If majors are a part of the progression toward career identity, then some better advising procedures may be necessary. At the very least these data suggest that college is a time of considerable tentativeness in regard to the future and institutions should be clear about what implications that finding holds for them.

College Sponsored Experiences and Services

- Small proportions of students have experienced off-campus internships but they highly value them as helpful to their choice process;
- While they acknowledge professors are not very directly involved in career-planning, they feel better academic advising would be helpful;
- Over half the students have had experience with career and counseling services, but less than 10% report them as "very helpful."

These reactions further extend institutional dilemmas. Internships, when properly designed, supervised, and evaluated, can no doubt contribute significantly to students' education and future decisions. To provide greater opportunities would require resource additions or allocations or new and highly committed support from the work world. To what extent are such alternatives realistic?

Similarly, academic advising requires professionally trained persons, faculty or staff, and appropriate allocations of college resources and time, both professional and student. Are there other ways, perhaps, to realize these reasonable objectives? Perhaps greater use of alumni/ae volunteers, or more reciprocity in advising from business and industry recruiters?

Career services on many campuses have been highly professional, committed, creative agencies in behalf of students. The findings here need to be examined carefully and consistently through institutional evaluation of support services and more in-depth interviews with students and graduates. Career services may need to be reconceptualized in terms of programs, relationships with faculty, and longitudinal research. That may not necessarily require major institutional overhaul, or excessive commitments of resources. As Sidney Marland has suggested, many of the required activities in career education are often in place on one campus or another.

"However, they are not likely to be systematically arranged in an integrated organizational structure with strong support from institutional policy makers." (Marland, 1978, p. 43.)

Two other points are not so much issues as they are opportunities. This study was not intended as an examination of the merits between coeducational and non-coeducational colleges, but rather our diverse populations served as comparisons of institutional emphases and diversity. The findings underscore that diversity among and within institutions, not single-sex or coeducation, more often accounts for career choice differences or different perceptions of college influence. Colleges and universities should be encouraged to find out whether individual philosophies, traditions, and curricular priorities may indeed have predictable and legitimate outcomes. Second, the data here show ample reason and challenge for future research, both in-depth analyses of special topics -- such as relationships of major, career choices and occupational positioning -- and longitudinal studies which track influences and experiences for individuals over a period of time.

Colleges and universities are involved in individual and group futures. They help to sort out personal talents, interests, and aspirations in addition to developing competencies in a wide range of fields of knowledge. How much they are involved, and how well they influence career and life decisions depends upon their philosophies and priorities, their commitment, and frequently, their creativity. We are not promoting particular solutions to the issues raised here. They are too subtle and too complex. We urge reflection, experimentation, research and discussion.

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TABLE 1

SELECTION OF MAJOR

(In percentages)

	TOTAL SAMPLE		CLASSES (Male/Female - all schools)			
Majors	Women (n = 2076)	Men (n = 1271)	FR	SOPH	JR	SR
History/civics	12	12	12	15	7	3
English/language	18	8	17	15	4	2
Social/behavioral sciences	33	28	9	9	28	38
Engineering/math	8	20	10	10	13	16
Physical sciences	8	12	14	7	7	2
Biology/medicine	10	12	20	18	20	21
Arts	7	3	4	7	10	14

TABLE 2

EDUCATIONAL PLANS

(Percentages by class, sex, and institution)

	BA		Master		Doctorate	
CLASS STANDING	M	F	M	F	M	F
Freshmen	12	13	31	39	55	47
Sophomores	11	13	34	39	54	47
Juniors	10	12	35	40	53	47
Seniors	11	8	32	43	55	47
Total	12	11	40	33	54	47

INSTITUTION (Male/Female combined)	BA	Master	Doctorate
S1	12	33	50
S2	13	40	42
S3	8	41	48
S4	8	36	55
S5	13	39	46
S6	9	34	54
COED	11	36	50
NCOED	8	39	52

TABLE 3

CAREER CHOICES RANKED ACCORDING TO TOTAL FREQUENCY OF OCCURRENCE

(In percentages)

CAREER FIELDS	Women n=2076	Men n=1271	COED n=2590	NCOED n=757
Business/management	13	16	15	13
Law	12	15	13	14
Medicine	10	16	13	10
Arts/media	13	8	6	16
Natural science	8	9	7	8
Allied health	7	2	5	5
Engineering/computer science	3	9	7	.5
Social/behavioral science	4	2	3	5
College/university teaching	4	3	3	5
Elementary/secondary education	4	2	3	2

TABLE 4

SUMMARY OF MEANS AND t-TESTS FOR FREQUENCY OF CAREER CHOICES

CAREERS	COED	NCOED	t-TEST
Business/management	.14	.15	.01
Law	.13	.15	.20
Medicine	.13	.09	.18
Arts/media	.10	.15	.21
Natural science	.08	.08	.00
Allied health	.05	.04	.01
Engineering/computer science	.06	.01	.12
Social/behavioral science	.03	.05	.09
College/university teaching	.03	.05	.12
Elementary/secondary education	.03	.03	.00

When $t \geq 1.96$, $p < .05$, for COED and NCOED comparisons.

TABLE 5

CAREER CHOICES BY INSTITUTIONS

(In percentages)

CAREER FIELDS	N=1021 S1	N= 469 S2	N= 513 S3	N= 244 S4	N= 598 S5	N= 532 S6
Business/management	12.8	9.8	17.2	10.7	19.2	14.1
Medicine	15.1	11.1	8.6	10.7	12.4	12.8
Engineering/computer science	5.6	7.5	.6	.8	4.0	8.5
Elementary/secondary education	3.3	3.6	3.1	2.5	3.8	2.4
Law	14.3	8.1	14.6	14.3	14.7	13.3
Natural science	7.0	9.2	7.6	7.8	10.4	6.4
College/university teaching	3.1	2.8	4.9	4.5	3.0	3.8
Social/behavioral science	3.5	5.1	5.3	4.9	2.2	1.7
Allied health	3.7	16.4	3.5	5.7	3.0	1.5
Arts/media	12.9	4.9	13.8	16.8	9.9	10.0

TABLE 6

CAREER CHOICES OF MALES AND FEMALES BY CLASS STANDING

(AGGREGATE DATA BY PERCENTAGES FOR SIX INSTITUTIONS)

CAREER FIELDS	FRESHMEN		SOPHOMORES		JUNIORS		SENIORS	
	Males	Females	Males	Females	Males	Females	Males	Females
Business/management	12.9	10.1	14.8	12.2	17.6	14.4	10.0	16.7
Medicine	15.2	13.2	15.2	9.0	15.7	7.8	18.5	10.6
Engineering/computer science	7.9	2.6	8.1	2.9	10.5	3.5	7.9	1.7
Elementary/secondary education	2.2	2.6	3.7	3.8	2.6	4.9	1.0	4.1
Law	16.0	13.5	16.2	13.2	11.8	11.7	17.5	10.6
Natural science	9.8	8.7	8.4	7.5	8.0	7.4	7.9	6.9
College teaching	1.7	2.4	3.0	3.8	5.1	4.3	3.0	5.0
Social/behavioral science	1.7	5.2	3.4	5.1	1.6	3.7	2.3	3.7
Allied Health	1.7	5.4	.7	7.1	2.6	7.2	3.3	8.9
Arts and media	9.3	10.4	9.8	14.1	6.7	14.4	6.6	14.5
Other	5.3	7.3	6.1	7.3	6.1	9.2	3.6	7.1
Undecided	16.3	18.6	10.8	13.9	11.8	11.5	8.3	10.2

TABLE 7

PREFERRED EMPLOYMENT SITUATION

Institution	Self Employed		Business		Government		College Research		Hospital Non Profit	
S1	37		9		4		10		11	
S2	37		11		4		13		12	
S3	31		17		5		13		9	
S4	34		8		3		11		11	
S5	33		12		6		12		6	
S6	33		18		5		12		11	
COED	35		14		5		11		10	
NCOED	33		12		4		12		10	
Women	31		13		4		11		13	
Men	47		12		5		12		5	
	M	F	M	F	M	F	M	F	M	F
Freshmen	49	33	13	10	5	6	12	13	4	11
Sophomores	50	33	10	14	6	3	9	9	5	12
Juniors	44	26	14	12	5	4	14	10	5	12
Seniors	46	31	12	13	4	3	11	14	7	15

TABLE 8

RELATIONSHIP BETWEEN MAJOR FIELD AND CAREER CHOICES

FRESHMEN CLASS | **MAJORS**

CAREER FIELDS	History/ Civics	English/ Language	Social/ Behavioral Science	Engr./ Math	Phys. Science	Bio./ Med.	Arts
Business/management	.14**	-.07	-.04	-.06	-.12**	-.09*	.01
Law	.20**	.04	.12**	.12**	-.15	-.11*	-.07
Medicine	-.13**	-.10*	-.10*	-.08	.48**	.15**	-.05
Arts/media	-.13**	.26**	-.13**	-.01	-.12**	-.09*	.33**
Natural Science	-.14**	-.11**	-.09*	-.06	.13**	.35**	-.03
Allied health	-.01	-.06	-.04	-.04	.10*	.01	-.04
Engineering/computer science	-.14**	-.07	-.08	-.05	-.06	-.05	-.05
Social/behavioral science	.27**	-.08	.53**	-.06	-.07	-.06	-.04
College/university teaching	-.03	.03	-.06	.10*	-.05	.01	.01
Elementary/secondary education	-.06	.04	-.01	.09*	-.06	0.03	.01

* $p < .05$
** $p < .01$

TABLE 9

RELATIONSHIPS BETWEEN MAJOR FIELD AND CAREER CHOICES

SOPHOMORE CLASS

CAREER FIELDS	MAJORS History/ Civics	English/ Language	Social Behavioral Science	Engr./ Math	Phys. Science	Bio./ Med.	Arts
Business/management	.13**	-.06	.07	.01	-.10*	-.04	-.05
Law	.17**	.03	-.11*	.08	-.10*	-.11*	-.07
Medicine	-.12**	-.11*	-.08	-.10*	.48**	.13**	-.05
Arts/media	-.15**	.25**	-.10*	-.02	-.11*	-.10*	.33**
Natural science	-.08	-.13**	-.01	-.10*	.06	.38**	-.05
Allied health	.13**	-.07	-.08	-.06	.11**	-.05	-.05
Engineering/computer science	-.13**	-.10	.58**	1.10*	-.07	-.05	-.05
Social/behavioral science	.22**	-.08	-.06	-.02	-.07	-.05	-.01
College/university teaching	-.03	.01	.01	.05	-.06	.01	.01
Elementary/secondary education	-.09*	.07	.01	.10	-.06	-.02	-.05

* p < .05

** p < .01

TABLE 10

RELATIONSHIPS BETWEEN MAJOR FIELD AND CAREER CHOICES

JUNIOR CLASS

MAJORS

CAREER FIELDS	History/ Civics	English/ Language	Social/ Behavioral Science	Engr./ Math	Phys. Science	Bio./ Med.	Arts
Business/management	.17**	-.01	.08	.04	-.13**	-.11*	-.04
Law	.10*	.03	-.08	.13**	-.13**	-.10*	-.04
Medicine	-.17**	-.10*	-.10*	-.04	.32**	.18**	-.04
Arts/media	-.07	.14**	-.11*	.03	-.10*	-.08	.32**
Natural science	-.14**	-.11*	-.07	-.09	.14**	.35**	-.04
Allied health	.11*	-.06	-.08	-.09	.15**	-.06	-.05
Engineering/computer science	-.18**	-.10*	.59**	-.10*	-.10*	-.02	-.06
Social/behavioral science	.23**	-.07	-.07	-.06	-.04	-.06	-.04
College/university teaching	-.01	.04	-.04	.05	-.04	.06	-.05
Elementary/secondary education	-.01	.13**	-.04	.04	-.07	-.07	-.01

* $p < .05$

** $p < .01$

TABLE 11

RELATIONSHIPS BETWEEN MAJOR FIELD AND CAREER CHOICES

SENIOR CLASS

CAREER FIELDS	History/ Civics	English/ Language	Social/ Behavioral Science	Engr./ Math	Phys. Science	Bio./ Med.	Arts
	MAJORS						
Business/management	.11*	-.03	.12*	.01	.13**	-.09	-.04
Law	.21**	-.01	-.11*	.06	-.11*	-.10*	-.07
Medicine	-.15**	-.13**	-.07	-.06	.35**	.19**	-.01
Arts/media	-.16**	.28**	-.12**	.05	-.11*	-.09	.25**
Natural science	-.09	-.10*	-.03	-.09	.14**	.31**	-.05
Allied health	.14**	-.10*	-.08	-.07	.12**	-.07	-.07
Engineering/computer science	-.14**	-.07	.44*	-.08	-.05	.02	-.05
Social/behavioral science	.24**	-.07	-.07	-.04	-.06	-.06	-.02
College/university teaching	-.06	.08	.06	-.02	-.05	-.01	.05
Elementary/secondary education	-.08	.17**	.01	.05	-.06	-.06	-.04

* p < .05

** p < .01

TABLE 12

PERSONS INFLUENTIAL IN CAREER/EDUCATION DECISIONS

(In percentages)

Institution	Family		Peers		Professors		Self	
S1	41		15		17		12	
S2	40		14		16		10	
S3	44		16		18		9	
S4	46		15		20		10	
S5	38		14		16		13	
S6	40		13		17		12	
COED	40		14		17		12	
NCOED	45		16		19		9	
Women	43		15		15		10	
Men	40		13		13		12	
	M	F	M	F	M	F	M	F
Freshmen	46	40	13	18	20	18	9	10
Sophomores	42	40	11	10	19	19	11	10
Juniors	35	39	11	9	16	16	13	12
Seniors	30	39	7	9	17	16	14	13

TABLE 13

PERCENT OF PROFESSORS PERCEIVED IN CERTAIN ROLES

(In percentages, male/female professors combined)

	WOMEN STUDENTS				MEN STUDENTS			
CATEGORIES	50% or more	About 25%	10% or less	None	50% or more	About 25%	10% or less	None
Offered helpful advice	32	33	30	5	30	36	29	5
Helped feel confident of abilities	26	38	30	6	26	37	28	8
Demanded high quality work	73	19	7	1	69	23	6	2
Interested me in field	36	38	21	5	35	39	22	5
Taught me important skills	32	36	26	6	35	39	22	5
Helped me in career decision	3	12	34	50	3	13	35	48

TABLE 14

PERCEPTIONS OF PROFESSORS

(50% Category)

Institution	Interested me in his/her field		Helped me make career decision	
S1	36		3	
S2	19		3	
S3	41		10	
S4	34		2	
S5	38		2	
S6	42		3	
COED	34		3	
NCOED	38		6	
Women	36		3	
Men	34		3	
	M	F	M	F
Freshmen	36	39	3	5
Sophomore	37	34	3	2
Juniors	30	36	3	3
Seniors	33	37	3	3

TABLE 15

IMPORTANT FEATURES OF A LONG-TERM CAREER

(In percentages)

VALUE	VERY IMPORTANT	
	Women	Men
Rapid career advancement possible	21	32
Good pay	31	42
Prestige	27	34
Autonomy	50	55
Steady progress	59	61
Contribute to society	63	58
Avoid pressure	14	16
Work with ideas	75	73
Helpful to others	71	65
Work with people I like	70	63

TABLE 15 A

COMPARISONS, COED/NON-COED INSTITUTIONS ON SELECTED VALUES

(In percentages)

VALUES	COED	NCOED
Good pay	40	35
Prestige	27	24
Autonomy	48	52
Contribute to society	58	63
Work with ideas	71	75
Helpful to others	67	70
Work with people I like	60	68

TABLE 16

PARTICIPATION IN CAREER-RELATED EXPERIENCES

(In percentages)

	WOMEN	MEN
Off-campus internships	19	8
Courses, including fieldwork	25	20
Worked as teaching/research assistant	16	22
Off-campus work (paid)	78	80
On-campus work	58	58
Volunteer work	72	62
Counseling services	60	59

TABLE 17

VERY HELPFUL EXPERIENCES IN CAREER DECISIONS

(In percentages)

Institution	Off-Campus Work		On-Campus Work		Volunteer Work		Counseling Services		Enthusiasm/Interest In Study	
S1	24		8		19		4		18	
S2	18		8		20		2		22	
S3	21		8		26		5		46	
S4	24		9		31		4		36	
S5	28		8		15		7		32	
S6	25		9		15		3		32	
COED	24		8		16		4		25	
NCOED	23		8		29		4		41	
	M	F	M	F	M	F	M	F	M	F
Freshmen	14	13	2	3	12	20	1	3	22	36
Sophomores	20	23	4	8	11	23	2	4	30	41
Juniors	27	32	12	12	12	27	1	8	26	37
Seniors	32	33	14	13	14	28	4	5	27	35
Women	24		9		24		4		37	
Men	23		8		13		2		26	

TABLE 18

WOULD-HAVE-BEEN HELPFUL EXPERIENCES IN PLANNING

Institution	Career Planning From Professors		Internships		Better Academic Advisement		Courses with Better Career Objectives	
S1	57		68		58		38	
S2	62		61		64		69	
S3	54		71		44		46	
S4	64		72		56		46	
S5	47		57		45		38	
S6	45		63		44		39	
COED	49		72		50		53	
NCOED	59		62		49		46	
Women	58		70		54		48	
Men	50		58		49		40	
	M	F	M	F	M	F	M	F
Freshmen	48	56	58	72	51	52	39	46
Sophomores	48	55	62	71	50	57	39	48
Juniors	58	63	58	70	50	57	42	48
Seniors	45	55	53	68	46	50	41	49

THE NEW AND OLD LIVES OF MEN AND WOMEN UNDERGRADUATES

Joseph Katz

Women's self-concept is the dynamic element which in recent years has often considerably modified male-female relations, has helped to change men's attitudes toward women, and has even led to changes in the self-concept of men. This is not to say that women's changed self-concept was the only active element; there was a common youth culture that has affected the self-definition of both genders.

In this paper I deal with the relationships of college men and women in the six schools studied. I pay particular attention to women's self-concept and the picture is one of considerable rise in women's self-esteem and aspirations. At the same time the picture is far from stable. Traditional tendencies, both intrapsychically and environmentally, are still strong. Moreover, in spite of the relatively secure achievement of equality, the roots of young women's self-consciousness and status are still tender and will require much further care if the gains of the recent years are to be truly consolidated.

The Academic Context

The general context in which these students have lived during the late 70's is one of satisfaction with their schools, a sense that their teachers are concerned with their academic development. This is still a source of surprise to those of us who during the 1960's watched strong student dissatisfaction with their universities and their teachers -- not greatly

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different from what they are today. Even though students have little out-of-class contact with their professors and desire more, they express themselves as very content with their courses. For instance, nearly 70% in response to the question of how valuable their course lectures had been to them, assigned them the highest two values on a five-point scale; over 70% thought their reading assignments similarly valuable. Most of them (69/72%*) described half or more of their professors as demanding high quality of work from them, a demand that presumably is appreciated. They otherwise relate their college experience in strongly positive terms. The vast majority of them feel that college has improved their abilities to speak and write effectively (77/75%), to organize and present ideas (87%), to formulate original ideas (74/70%) and to acquire new skills on their own initiative (81/84%).

The students' ambitions are high. Only slightly more than 10% do not want to go further than the Bachelor's degree; somewhat more than half of the men (54%) and slightly less than half of the women (47%) aim at a doctoral degree. It is worth noting that this is the second generation of post-war students, the children of parents who first experienced the educational boom. More than half of the fathers of the students studied by us have had education beyond the Bachelor's degree and nearly a third of their mothers have as well. For these students academic commitments and interests are even more natural than for their parents.

The impression conveyed by the student responses also is that the benefits of college seem to come primarily through the classroom and the student culture.

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*Whenever two percentage figures are given, the first figure is for men and the second for women.

For instance, when asked about career services, counseling, Deans' offices, etc., 40% reported no experience and of the rest only 8/13% found them "very helpful" or "helpful." Student services tend to get lower marks. This response, however, should lead neither to complacency about the classroom nor to a tendency to continue further on the road of reducing services. Expressed satisfaction with the classroom -- half of the students assert rather generously, I think, that their faculty tend to be interested in their personal development -- must be tempered by the consideration that a new obedience has made students more docile and less inclined to raise critical questions about the significance of what they are learning in the classroom, for themselves or for the advancement of knowledge. Budgetary cuts have led to further decreases in the always weak influence (confirmed by many student surveys) of student services and student affairs officers upon students; and this means further diminishing the opportunity to use the four years for the emotional and social development of students.

Both male and female students in our six institutions overwhelmingly (85%) describe their fellow students as competitive and the indications are that this is a bothersome fact for them. Competition must affect the quality of their interpersonal relations and the manner of their cognitive development. While many say that exams and grades cause them anxiety, nearly all also say that they can assert themselves in discussions with students of either the same (92/87%) or the opposite sex (90/82%), and most of them (73/62%) also feel quite free to disagree with their teachers.

In this ambitious, contentious, and competitive academic atmosphere, the women seem to be quite able to hold their own. Their ambitions for professional advancement are nearly as high as the men's and they feel nearly as competent to become successful in their further training. Small proportions of women report obstacles to their progress through sexually discriminatory attitudes, particularly as far as professors are concerned. Men and women tend to give similar responses to questions about the amount of helpful advice, encouragement, and interest in academic work they received from their professors. Interestingly enough, 79% of the women and only 62% of the men label false the statement that "Faculty members tend not to take women seriously as students." (Only 5/8% think the statement true; the rest have no opinion.) Women (75%) more often express anxiety over assignments and exams than men (59%) though they (73%) do not convey much more worry than the men (70%) about getting good grades. More women (69%) than men (56%) report themselves as doing their assignments conscientiously and taking careful notes in class (90% vs. 77%). But one might ascribe this less to a diminished sense of self and more to a greater sense of carefulness and responsibility vis-a-vis academic demands. Somewhat more women (49%) than men (40%) fear being wrong in front of peers and professors and somewhat fewer feel free to disagree with their teachers (62% vs. 73%) . One might ascribe their caution more to a refined understanding of academic subtleties than to a sense of lesser capacity.

There are some cracks in this positive picture. While the women, according to their self-reports, received higher high school grades than the men -- the differences are not great -- their college grade average is somewhat lower as far as the top grades of A+ to A- are concerned (21% vs 26%). They lag somewhat behind the men in ambitions for attaining a doctoral degree. The matter of interpretation here is subtle. Women are so close to the men in ambitions that, in comparison with a few years ago, one might chalk up these data as evidence of a great step forward -- towards near equality.

In regard to areas of study, women opt in much smaller proportions than men for the physical sciences and in much higher proportions for the humanities and social sciences. The gap in aspirations for the professions of law and medicine is much smaller than in the past. The interpretation of these data depends in part on whether one considers the achievement of near arithmetical equality, as distinguished from equal opportunity, a desirable goal. Nevertheless, the relatively low representation of women in the physical sciences bears further investigation. Our data show that women continue to ascribe to themselves considerably less mathematical or mechanical abilities than the men and they also report their college experience as having equipped them in lesser degree than the men to utilize quantitative tools. At the same time, the continuing higher representation of women in the humanities and social sciences may reflect less any essential differences of interest between the genders than the continuing greater pressure upon men to look for economically advantageous outcomes of their education. For the sake of the men and for the sake of better communication between the genders, one may hope for more opportunities for males to expand in these humanistic areas.

The picture presented here is enhanced by the fact that women's aspirations for independent careers are high, in many ways approximating that of the men. In their desire of combining a career with child-rearing, the women are more ambitious than, as we shall see, many of their men would prefer them to be. The consolidated gain in female self-esteem, ambitions, and plans goes together with their reports of having encountered relatively few cases of sexism on the part of their teachers. (What is meant by "relatively few" depends on how much one makes of the 17% of the women, and 13% of the men, who say that "many faculty here are sexist.") The sense of relatively mild faculty sexism reported is also supported by the fact that both in the questionnaires and the interviews, female faculty tend to be regarded as faculty first and that the gender of a faculty member is put second to her or his capacities as a teacher or a scientist. Only 19% of the women find it easier to talk to a female than to a male academic adviser. Women students report themselves to have been the object of an occasional intellectual put-down much more frequently from their peers (46%) than from their professors (23%). This is surprising in light of the fact that, as we shall see, their male peers share many of their basic attitudes. But students have much more frequent contacts with each other and peers may be less "careful" in the expression of prejudiced views than professors.

One should again take some care not to interpret these data in too rosy a fashion. Our interviews with students suggest, at the very least on the part of some women, a continuation of traditional prejudices according to which women are seen as not quite as competent as men. For instance, one women told of having had a choice of two teaching assistants. She preferred the male because she considered him _a priori_ "the smarter." She was aware of the prejudicialness of her choice and said to me that next time she would choose the female. In telling me this, she realized that her second choice was still prejudiced, in the reverse way, and told me so laughingly, perhaps achieving through the interview a less biased view of the matter. It is of interest to note that women students when asked about influences on their career plans list female professors as somewhat less influential than male professors. But that response must be viewed in the context of the still woefully small presence of women on many college faculties.

It is quite conceivable that the general docility of the students noted previously may also have lessened some sensitivities that women a few years ago had about their status, about male attitudes to them, and their own attitudes about their femaleness. But it must also be noted, a fact that appeared only in the interviews, that our women students are concerned with the problems of reconciliation of being a spouse and mother with having a career and with the special gratifications and responsibilities that lie in the role of spouse and mother. Perhaps this side of the female role has been somewhat glossed over during the early '70's in the drive for the achievement of greater equality. These somewhat less acknowledged feelings and tendencies may now be re-emphasized by some students. (Obviously, this is spoken not from the point of view of seeing a return to the traditional, but from a sense of the still evolving definition of gender roles.)

At the end of this section is should be pointed out that the environment outside of the college continues to have a great impact on students. When asked what people have influence on their career plans, the students report their mothers and fathers much more influential than their professors or peers. About half of the students list their parents as "influential" or "very influential." About a quarter list their parents as "influential" and similar proportions list their male and female friends. Given the emphasis in social theory on the influence of peers, these are somewhat surprising data. This writer in an earlier investigation (reported in Class, Character and Career, Stanford University: Institute for the Study of Human Problems, 1969, p. 131) tried to show that presumed peer influence in some respects was reflecting parental influence in disguise. The present data seem to bear out this contention in the students' own perceptions. Perhaps theories concerning the relative influence of parents and peers are due for reassessment. (A recent five-nation study of youth between 16 and 20 goes in the same direction as our data; Max Kaase, Berkeley Press, 1980)

The Social Context

Our data show that while women enter relationships with men with a somewhat lower estimate of their academic abilities and express slightly less intellectual self-confidence than men, their self-estimates in other respects are very much like that of the men on such dimensions as social self-confidence, leadership ability, understanding of others, assertiveness, drive to achieve, originality, physical attractiveness, popularity. When it comes to such matters as discussing intellectual or social issues, going to dinner or lunch together, or going to movies, plays and concerts, overwhelmingly large proportions of male and female students say that they are more likely to do these things with members of both sexes than just with either sex alone. Women and men in about equal proportions have close friends of both sexes. (But men have fewer close female friends and women have fewer close male friends.) So the general picture is one of rather open and free communication, considerably different from a decade ago when housing arrangements, administrative attitudes, and the student culture conspired to set up many barriers to the informal meeting of men and women students with each other. In the coeducational institutions studied, nearly all students assert that living in a coeducational dormitory makes it easier to have friends of the opposite sex and large proportions also say that living in a coeducational dorm makes it easier to have an active social life. This confirms observations and studies of this author extending over almost ten years describing the affiliative impact of coresidential dormitory arrangements (see "Sexuality and College Life," Change

Magazine, February/March, 1980).

This picture of congruence and happy affiliativeness of male and female students is also supported by their marital expectations. Both genders agree in the preference for a married life. Given current youth culture and the age of our respondents, it is perhaps somewhat surprising that only around 10% describe themselves as in the future preferring to live with a member of the opposite sex without being married. (This may support my earlier surmise about some trends in a more conservative direction.) Men and women have nearly identical expectations of the number of children they want. About one-fifth expect to have no children ten to fifteen years from now; about half expect to have two children, and only 14% expect three or more children. We did not ask it, but it appears in other studies: the first child is expected at a considerably later age than was the case only a few years ago.

As before, qualifications must be made about this picture of happy congruence. Perhaps the most weighty qualification is that rather large proportions of women think that men of their age usually seem less mature than women. This perception of the women is more than subjective. Previous studies of college students by this author have shown that women's emotional development, particularly in regard to interpersonal relations -- understanding, empathy, and being analytical in regard to people -- is ahead of that of the men (see No Time for Youth, San Francisco: Jossey-Bass, 1968, pp. 42 ff.53). There is the additional factor that women's sense of interpersonal responsibility, as recent studies by Carol Gilligan have shown ("In a Different Voice: Women's Conception of Self and Morality," Harvard Educational Review, 1977, 47, 481-517) may be more developed than that of men. These factors may help

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explain why according to our data many more women (42%) than men (23%) are likely to discuss their emotional or personal problems with members of their own gender. Similarly while women do not express any strong preference for female in contrast to male academic advisers, they express a stronger preference for talking to female rather than to male personal counselors. All this suggests that many women may feel that they can share their emotional concerns in a more sophisticated and intimate fashion with women friends than with men. (The implications for the education of men to lessen this gap are evident.)

Interestingly enough, the men show an opposite tendency of more frequently "getting high" with members of their own gender and doing so more frequently than the women -- "getting high" perhaps being in part an avoidance of emotional insight. Most curiously, only about 30% of the men describe themselves as tending to play and watch sports primarily with members of both genders, while in apparent contradiction almost double the women say so. Are these women misperceiving their presence in this traditionally more masculine domain or, to the contrary, do the men either not perceive or do not wish to recognize women's presence in their sports activities? Whatever the answer, there seems to be a tendency on the women's part to participate and a tendency on the men's part to exclude them. Another continuing partial separation of the genders is expressed by the fact that more men and women spend time with members of their own gender than with the other. (Fifty-seven percent of the men spend more time with men and 43% of the women more time with women.)

There is some discrepancy in female and male attitudes to future role. On the whole, the men tend to want their partners to refrain from being employed while their children are in infancy or very young. A third of the women think that a mother should work part- or full-time even when their children are in infancy; two-thirds think that a mother should work when her children are between two and five; only 15% and 45% of the men, respectively, think so. Agreement is closer from age six onward. These data must be viewed in the context of other studies which have shown that the current generation of college men is highly supportive of the occupational aspirations of women and that the men expect to share equally in the rearing of children and other associated household tasks. A large proportion of the men, though smaller than that of the women, also expects to have partners who will share equally in the financial responsibilities for the marriage.

Sex in recent years has become increasingly a part of friendship on the college campus. Our data bear out other investigations: a fairly high frequency of sexual activity. (See J. Roy Hopkins' review of studies in his article on "Sexual Behavior in Adolescence," The Journal of Social Issues, 1977, 33, 67-85.) They also confirm the results of this author's previous investigations (see Change Magazine, February/March 1980) that women tend to be sexually more active than the men. Men and women nearly equally assign sexuality an important place in their lives. They also indicate that having a sexual relationship does not mean a restriction of friendship with members of their own or the opposite gender. They show a high regard and concern for their sexual partner, saying that once they have a sexual relationship they take that person into consideration in all that they do. When it comes to the linking of sex and affection, traditional differences between men and women show themselves still very much at work. Many more women (42%) than men (19%) agree strongly that two people should know each other well before becoming involved in a sexual relationship. Otherwise men and women share the same liberal attitudes: couples should live together for some time before deciding to get married; it is important to have sexual relationships before marriage. Many students (33/27%) think that a sexual relationship has a positive impact on their academic performance.

Our data indicate that sex has become very much more part of the normal life and friendship patterns of college students without any of the dire consequences that were foreseen by many administrators a decade ago. In regard to the consequences of sex, it must be noted that women report using contraceptives much more often than the men. Our own data are not sufficiently explicit, but in the light of other investigations, they can be read to indicate that some proportion of college students does not use any contraceptives at all. Figures on unwanted pregnancies in other studies show that there is still an important need for raising awareness about attitudes and consequences.

Forty-two percent of the women and 59% of the men endorse the statement that "there are strong feelings against homosexuality on this campus." This is a large enough difference in perception to make one wonder. It may reflect the males' greater defensiveness vis-a-vis homosexuality. It also indicates that the liberalization of attitudes to sexuality does not extend in an equal way to homosexuality.

Interpretative Summary

(1) There are definite indications that, compared with ten years ago, women feel much more secure in taking an equal role in domains that were traditionally regarded to be male prerogatives. In career expectations, academic fields of concentration, and intellectual assertiveness, women conceive of themselves as of equal rank with the men. We may have reached a point where such equality is beginning to be taken for granted; it does not need to

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be asserted because a counter-assertion would seem silly or antiquated. We may be closer to a situation in which gender differences do not intrude into common human characteristics, in which they are not used for the sake of one gender putting down the other.

Other differences, some real and some fancied, persist. Women tend to regard themselves as emotionally superior to their same-age male peers and they somewhat tend to prefer members of their own gender for the sorting out of emotional problems. Some men in their relations to women still can detach sexual attraction from affection. Other men still put down women through aspersion on their intellect or appearance.

The newly raised consciousness of women is in some respects fragile. In the intellectual and academic spheres there is still a tendency for women to think themselves as not quite on a par with men. Traditional concerns with family and child-rearing and concerns with the affective life and the responsibilities of people to each other -- all of which loom larger for women than for men -- make the expansion of roles for women more problematic. The combination of all these tasks constitutes a special challenge. There is some indication that women are meeting the challenge creatively, but they also could use more help from their teachers to cope with their problems.

(2) It is clear that for this generation of male and female college students there are changes in the traditional attitudes to the family. While marriage still remains the chief adult form of association for men and women, several things are different. Marriages are entered into later, the expected number of children is smaller, the birth of the first child comes later.

Perhaps more important is the fact that for the women marriage no longer is nearly as much as in the past the justification of their existence. It is no longer necessary to prove oneself by being engaged and ready for marriage during one's senior year. Marriage is expected to come in due course and one needs no longer to be desperate about it. One can sort out what kind of man is truly suitable for a partner. The old Eriksonian formula that identity should precede intimacy has found further realization. Women give themselves more time to establish more fully what sort of individuals they want to become before making more lasting commitments. For the men this changed consciousness on the part of the women means the challenge of developing their emotional suitabilities and capacities for partnership more fully rather than taking it for granted that their status as males and breadwinners will assure their finding a partner. They can indirectly derive considerable psychological benefits from the economic fact that women can now achieve higher occupational status and suitable incomes than before.

(3) The greater rapprochement of men and women has meant that traditional barriers have lessened. Much of past male-female relations in college was a ritualized game, heavily structured by rules. The "date" was the most glaring instance of this ritualization. The student movement and other developments in the '60's encouraged the freer expression of feelings. Men and women students have been more open in revealing their underlying attitudes and feelings towards each other. This fact of greater freedom of expression is perhaps as important as the accompanying fact of greater sexual freedom. Premarital sex thus can become more fully a means for finding a suitable, more permanent partner and a chance for getting to know oneself better. But putting it this way may make sex appear too much of an "educational" matter. There is also a larger acceptance of sex as pleasure.

The current situation forces us to revise a long-held psychological maxim, namely that delay of sexual gratification is developmentally desirable. The current experience has shown that sex can be integrated in the life of the late adolescent without implying that "intolerance for delay" which was held to conflict with development because immediate gratification of impulse interferes with the building up of more complex intrapsychic structures. To some extent just the opposite seems to be the case: Greater sexual freedom may have led to a diminishing of the traditional overemphasis on sex, the rushing into marriage under sexual pressure, and the overidealization of each other by the genders. It may facilitate the eventual assumption of the normal place of sex in human relationships.

(4) In the past the separation of men from women students was fairly pervasive. It began with residential segregation in different dormitories, at times at some geographical distance on the campus, and other formal and informal barriers to association. In post-college life the segregation of men and women was a fairly common characteristic. We have found that men and women now engage in many common activities. Such activities also no longer require exact pairing. In the past, the "dating" by a single couple was a primary form of association. (Sometimes there was "double dating.") Nowadays many activities take place in groups of which the gender composition is not even. Such groups can get together fairly spontaneously without making arrangements several days, if not several weeks, in advance, as was characteristic of the traditional "date." There are, however, some tendencies still for segregation. A proportion of women prefer the company of members of their own gender for the discussion of emotional problems and issues. Men prefer the company of their own sex for both doing and watching sports. Interestingly enough, this

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division is along traditional, perhaps stereotypical lines, with women sharing more of their inner life with each other, while motor activities are preferred by men in the company of their own gender.

(5) Very tentatively and very inferentially, this writer has the impression that we are presently in a phase of consolidation as far as women's own sense of themselves and male-female relationships are concerned. The push of the last ten years in regard to gender roles, women's self-consciousness, and male-female sexual behavior, was of some unprecedented dimensions. It is perhaps no surprise, but a common psychohistorical fact, that people seek some respite in order to assimilate new developments. The current phase of some quiescence may also mean that an equal role has come to be regarded as natural rather than as something that needs either to be justified or fought for. The unfortunate fact is that many economic, social, and educational arrangements still do not match this sense of equality.

I also surmise a certain amount of backsliding. After all, traditional arrangements have the comforts of passivity for both women and men. For women the "comfort," most crudely expressed, is in being taken care of. For some college women the domestic role continues to be a very attractive one, and they resent, more or less consciously, what they consider pressure towards careers. For men the "comfort" is not to have to rise to the challenge that emanates from a partner who wants respect, consideration and cooperation as a full equal; of having to regard one's partner fully when it comes to the nature of one's work, place of residence, career path, etc.

Some of the lessened complaints about discrimination expressed in our data may therefore not be as positive as they sound. They may reflect acquiescence to the status quo which characterized the students of the late '70's in general. In glaring contrast to the active questioning of political, social, and psychological realities by students in the late '60's, this generation takes institutions very much for granted and it can perhaps be divided into those who work hard to gain the rewards that current society has to offer and those who have diminished hopes and hence have sunk into some apathy without even the accompaniment of social protest -- though the latter is always a possibility if some new events galvanize these passive frustrations.

One should not exaggerate the acquiescence. Half of our respondents more or less strongly disagree with the notion that an individual can do little to bring about changes in our society. Also, when it comes to planning their careers, our students think personal advancement, prestigiousness of occupation, even pay, much less important than to make a major contribution to society, to be helpful to others, to work with ideas. There is in these and other responses an indication of an underlying idealism, a willingness to serve society that our institutions are quite inadequately utilizing. Perhaps an important charge that could be brought against current teaching and institutional pressures is that they encourage a competitive, individualist career-seeking and that they provide preciously few opportunities for students to develop their capacities for social service and for enlarged social responsibilities. Even such capacities as students develop for mutual understanding and for working together are more largely a product of the student culture than they are of the formal educational arrangements. The classroom is still quite "orwellian" in which the teacher is in a one-to-one relationship with the students, with a minimum of encouragement of group learning and group cooperation.

Recommendations follow from the above considerations. We have encountered the following: fragility in women's self-esteem and sense of self; some tensions, misperceptions, and separations in the relationships of men and women; a frequent sense of inadequate preparation for advanced professional training; an unexpressed need for help in dealing with the inevitable anxieties and problems caused by intimacy and by the encounter of the genders with each other; too great a distance between teachers and students, which is perhaps part of a more general sense of emotional isolation and a certain loneliness.

What to do about all of this? The traditional answer when one comes across such problems is to say: more counseling -- in spite of the often rather meager resources given to counseling. Counseling, even better and more counseling, cannot alone do the job. The response will need to be more complex. A considerable rearrangement of *institutional* ways and expectations is required. Among other things, teachers might take more responsibility for the academic, occupational, and personal development of their students. Student service professionals could become a further resource by serving as teachers of faculty in the "nonacademic" dimensions of professorial tasks. The description of the possible rearrangements is a long chapter by itself (see the author's "Collaboration of Academic Faculty and Student Affairs Professionals for Student Development," in David Tilley et. al. *The Student Affairs Dean and the President*, Ann Arbor, Mich.: ERIC Counseling and Personnel Services Clearinghouse, 1979, 33-54).

Our data confront us once more with the human dimension in higher education. In recent years concern for the human aspect of education has taken a back seat to budgetary considerations and traditional academic objectives. A sometimes desperate attempt has been made to maintain the academic enterprise -- classroom and scholarship -- considering the development of everything else as secondary if not dispensable. There are some signs that the deficiencies of this budgetary "realism" are becoming apparent. It seems to me necessary that they do. The touchstone of individuals and of society is the quality of our lives, what kind of people we are and are becoming.

APPENDIX

METHODOLOGICAL NOTE ON DATA COLLECTION AND ANALYSIS

The study of coeducation was based on the premise that a broad survey of undergraduate experience would yield information on the ways in which the college years impacted differently on men and women students. We were interested in obtaining a wide range of data from students in all classes. The original proposal called for data collection at three coeducational Ivy League schools (Brown, Princeton, and Yale) and at one female school, one of the "seven sisters," Wellesley. As plans for the study progressed, it became possible to obtain the cooperation of three more schools, another female school (Barnard), another Ivy League coeducational school (Dartmouth), and one member of the New York State university system (Stony Brook). These schools were added to the basic group, and one of the original members, Yale, decided to do an individual project paralleling the coed study. Thus the final complement of schools was Brown, Princeton, Wellesley, Dartmouth, Barnard, and Stony Brook.

A single questionnaire was developed by the Research Team to be used at all the participating schools. This was a rather long questionnaire of twenty pages, that was to be filled out by the selected students. The questions focused on four major areas: academic performance; student-faculty relations; values, attitudes and social realtions; and career goals and planning. In addition, a demographic section was included. Each of the four major areas included detailed items on the various dimensions of that aspect of student experience. Although most of the questions were forced choice, yes-no, or rating questions, a number of open-ended opinion questions were included, e.g., "What 2 or 3 things do you worry about? What problems do you forsee in achieving your ultimate educational and occupational goals?"

The sample was selected randomly at each of the schools, although there were some differences between schools in how this was accomplished. At Brown we chose a random sample of equal numbers of men and women from each class, for a total of 1800 selected students. At Wellesley all students were included in the survey; at Princeton a random sample of 1500 students was selected; at Dartmouth and Barnard, smaller random samples were selected; and at Stony Brook a random sample of dormitory floors was selected with all students on that floor included in the sample.

Questionnaires were self-administered with distribution and collection also differing somewhat among the participating schools. At Brown and Dartmouth students were asked to come to a central location where they filled out the questionnaire; at Wellesley and Stony Brook they were distributed and picked up in dormitories; at Princeton and Barnard they were distributed in the mailboxes. These differences led to different rates of response for each school, with Wellesley leading the group in completion rates.

SCHOOL	NUMBER DISTRIBUTED	NUMBER COMPLETED
Brown	1800	1021
Stony Brook	600	469
Wellesley	600	513
Barnard	650	244
Dartmouth	800	598
Princeton	1500	532
	TOTAL SAMPLE	3377

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Full tests of response bias have yet to be completed, but one simple test of the randomness of response that has been completed was to determine the distribution of students within classes, by sex, for each school. This showed that the distribution of students over the four classes was similar for each of the schools, and for males and females. In most instances about 30% of the students were freshmen, 25% sophomores, 25% juniors, and 20% seniors (see Table A).

Other demographic characteristics can be compared across the schools. The race of students who completed the questionnaires was distributed as follows:

Brown	89% white
Princeton	87% white
Wellesley	81% white
Entire sample	85% white

The religious upbringing of the sample group was about 33% Protestant, 25% Catholic, 25% Jewish, and the remainder other or non-denominational. The sample was predominantly from suburban areas (40%) or from large cities (20%). About 75% of the sample came from families where the parents had more than a high school education (almost 50% of the fathers had post-graduate degrees).

All coding of responses was done by a single staff at Brown University. Following the coding, responses were punched on IBM cards, and a merged data file, using S.P.S.S., was constructed, with six subfiles, one for each of the schools. Indices and scales for each of the major content areas were devised by the Research Team members. These are discussed in the relevant research reports. All computer work was done at the central location, Brown.

TABLE A

CLASS DISTRIBUTION OF COMPLETED INTERVIEWS AT PARTICIPATING SCHOOLS BY SEX

Class and Sex	School					
	Brown %	Wellesley %	Barnard %	Dartmouth %	Princeton %	Full Sample %
Males						
Freshmen	30			28	32	28
Sophomores	26			24	21	26
Juniors	23			25	21	24
Seniors	21			23	26	22
Females						
Freshmen	30	30	23	37	24	28
Sophomores	26	29	28	18	26	23
Juniors	24	18	34	20	23	25
Seniors	19	22	15	25	27	24

SECTION II

THE BROWN EXPERIENCE

TRENDS IN SELECTED STATISTICS FOR UNDERGRADUATES AT BROWN UNIVERSITY, 1960-1976

Kathryn Dion and Rodney Hartnett

This report examines various longitudinal data for men at The College of Brown University and women at Pembroke College when they were students at separate colleges and for several years immediately following the merger of the two schools in 1971. The purposes are to note any changes over time, especially where differences by sex exist and to see whether the merger of the two schools is reflected in any abrupt disturbances in the trend lines.

I. TRENDS IN STATISTICS OF ENTERING STUDENTS

Figure 1 shows the rate of change in average S.A.T. verbal scores nationally and for entering students at Brown and Pembroke. The years listed at the bottom are the years the students measured entered Brown as freshmen. The national average includes all students who took the S.A.T. that year, many of whom never entered college. Nationally, S.A.T. scores reached a peak in 1963 (with a national mean of 480) and have declined steadily ever since, reaching 430 in 1976 -- a decline of exactly 50 scale points in the 14 year period. SAT-V scores of students entering Brown (or, until 1971, Brown and Pembroke) show a considerably different picture. These mean SAT-V scores increased until 1968, at which point the mean SAT-V scores were approximately 650 and 700 for males and females respectively; after that point they have declined steadily except for a slight turn upward in 1974. The disparity between male and female scores begins to lessen considerably after the high

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point in 1968. Whereas the women's mean score has dropped almost 80 points since 1968 (and 25 points since 1962), the men's decline has been only 40 points since 1968 -- about half as much as the women's. Furthermore, the mean score for men is actually higher in 1976 than in 1962. Women entering Brown still had higher SAT-V scores in 1976 than the men (approximately 623 vs. 612), but the difference in men's and women's scores is much less now than 10 years ago because of the greater decline in scores of women.

Similar analyses for SAT-Math scores are presented in Figure 2. Again, it should be noted that the decline in scores nationally began in 1963 and was steadily downward (dropping from 500 in 1963 to 470 in 1976), whereas the math scores for students entering Brown and Pembroke rose until 1968 before beginning to decline. Between the years 1962 and 1968 there was not much difference in the mean SAT-M scores of students entering Pembroke and Brown. Since 1968, as was the case with the SAT-V, the decline in scores was much greater for women than for men. Women's scores fell approximately 45 points (from 675 to 630) between 1968 and 1970, after which they continued slighty downward to 625 in 1978. Note that the overall 50-point decline for women between 1968 and 1976 was more than double the drop in SAT-M scores nationally during that same period. Men's scores declined less precipitously (from about 670 in 1968 to 647 in 1972) and then rose again since 1972 at which time they had returned almost to the 1968 high point.

Thus, for both Verbal and Math scores, the decline has been greater for female than male students, with the declines, for both sexes, being most dramatic after 1968.

Figure 3, percentage of entering students whose high school rank was in the 90th percentile or above, displays another possible indicator of the quality of the incoming student body. The trend towards increasing the number of students who were in the top 10% of their high school classes continued through the merger period. In Figures 1 and 2, SAT declines were greatest, especially for women, during the years 1968-1970. For men, the decline was spread out more, but still, a large part of it took place during 1968-1972. Nevertheless, the percentage of students who ranked in the top 10% of their graduating classes continued to increase during this same period.

The suggestion that might have seemed reasonable from the SAT data is that the quality of students enrolling at Brown is decreasing. These data (Figure 3 data) indicate that, compared to their fellow secondary school graduates, the quality entering Brown is increasing. It suggests that student grades in high school (and thus, their rank-in-class) are being determined on the basis of an increasingly wider variety of academic competencies, ones which apparently are not being tapped by the SAT's. It also raised the possibility that the admissions decision at Brown, and particularly Pembroke, were being based on other signs of student potential. As the admissions staff sought able students, they turned to other indices of achievement and accomplishment and possibly gave less attention and emphasis to SAT scores. Thus, rank-in-class continued to increase, but SAT scores declined. SAT scores were certainly high enough to afford the admissions committee this latitude.

Figure 4 displays changes in the size of the applicant pool, beginning with those students who wished to enter Brown in 1957 (i.e., members of the class of 1961). The biggest jump in male applicants to Brown came between 1968 and 1970. There were 5068 applicants in 1968, 6852 in 1970, and 6599 in 1971. This large increase in applications took place before any decision on the merger of the two schools was made, and after Brown had introduced the flexible curriculum.

It is not unexpected that the merger would more dramatically affect women applicants' perceptions of Brown and perhaps the number of women choosing to apply to Brown. The largest jump in women applicants came between 1970 and 1972. In 1970 2228 applied to Pembroke; 2487 applied to Brown in 1971; 3175 in 1972; and 3252 in 1973.

For women there is a negative relationship between application increases, as reported in Figure 4, and SAT data, as reported in Figures 1 and 2. Note, for example, that during the years 1968-1972, when the applications increased by more than 50% for women (from 2000 in 1968 to over 3000 in 1972) the SAT scores dropped considerably. This same relationship is not as apparent for males. The largest increase in male applications, between 1968 and 1970, was accompanied by a decline in both verbal and math scores, but it was slight relative to the change in the women's mean scores.

Of the students who apply to Brown and are accepted, an even smaller percentage actually matriculate. That percentage, the yield, is plotted in Figure 5. The yield for women at Pembroke in the early and middle 1960's was always higher than for men at The College. Then in the period 1970-1972 that trend reverses briefly before resuming the earlier pattern. In more recent years the difference in yields for the two sexes is lessening. The rather abrupt change in the yield trend for women in the 1970-1972 period was accompanied by a jump in female applicants as shown in Figure 4 and an increase in the proportion of women in the incoming freshmen classes. In 1970, 29% of the freshmen were Pembroke students. But in 1972, the first year women applied to and were accepted at Brown, women comprised 40.2% of the freshmen class, 42% in 1973 and the percentage has been gradually increasing since then. The great jump in male applicants took place in 1969-1970 and at that time the number of men accepted and the number of men matriculating did not substantially change.

These data are interesting and important, because the yield, perhaps more than any other statistic, indicates mutual attractiveness; that is, how attractive the institution is to students that the institution would like to have enroll. Figure 5 says several important things. First, with the exception of a "blip" in the yield data for women between 1970 and 1972, the overall pattern during the last decade, for both sexes, is downward. For women the decrease is 8% (from 58% in 1966 to 50% in 1977) and for men it is 7% (from 54% in 1968 to 47% in 1977). Surely, more than anything else, this is simply a reflection of the difficult times for higher education generally, and private or "independent" higher education particularly, during this period.

Of particular interest to this research effort, however, is that the yield data offer no suggestions of an impact -- negative or positive -- on the enrollment decisions of accepted candidates. There may have been an influence on the decisions of women applying in 1972, as evidenced by the 6% jump in yield. If it was an effect of the merger, however, it was short-lived. Basically, the yield data for both sexes during the first five years after the merger continued down at about the same rate as before.

No quantitative records of the qualifications of those accepted to Brown who choose not to matriculate had been maintained from year to year. Therefore, it is not possible to comment on the quality of the matriculants relative to their peers who go elsewhere before and after the merger.

II. TRENDS IN EDUCATIONAL PROCESS FACTORS

Beginning in the 1950's and continuing to 1974 the University Office of Educational Measurement maintained individual record cards on undergraduates here. Some of the items recorded on these cards included the student's career and concentration interests upon entering their freshman year. This information was apparently used as an aid in assigning advisors to the new students since the advisor's name appears with this data also. A student's final concentration and a graduation date were later stamped on these cards. This means that the rate of persistence or change within fields of concentration can be traced over time for various student cohorts. The value of this information lies in its ability to shed some light on the amount of influence the Brown college experience may have on the important choices made in higher education.

In the graphs numbered 6 and 7, concentrations are grouped into five categories. Group I includes most of the sciences: biology, chemistry, bio-chemistry, aquatic biology, geology and several others. Group II includes mathematics, physics, computer science, engineering, and other very quantitatively oriented subjects. Group III includes international relations, political science, psychology and other social sciences that do not rely heavily on quantitative analysis at the undergraduate level. Group IV is comprised of most of the humanities: art, literature, languages, philosophy, etc.

The graphs plot the percentages of students who declare their intention to concentrate in one of the field groups and actually graduate in the same field. Graph 6 is women; graph 7 is men. The graphs are not based on the actual number of people graduating in these fields, since freshmen who were undecided on a major were not included in these figures. Only those who indicated a major in their freshman year, approximately 80% of the class, were counted.

More men and women interested in the natural sciences, Group I, are persisting in those fields in the later years of the survey. The opposite trend may be observed in the persistence rate of women in Group IV, the humanities.

Some of the career interests of incoming freshmen men and women appear in Figures 8 and 9. Unfortunately, it is not possible to match up those student aspirations with the actual positions of the graduates today without undertaking a far more extensive study. Depending on the response rate, the alumni questionnaire might yield some trends when it is completed. Nevertheless one is able to observe some changes in the career interests of the incoming students over the years.

For women entering Brown there is a steady increase in the number interested in pursuing a career as a medical doctor, and a decrease in those who indicate a desire to teach at the elementary and secondary level. The increase in medicine among women as shown in Figure 8 complements the data in Figure 6 which show the field-choice stability of women in the natural sciences to be increasing steadily.

For men, there is a decline in interest in business as a career avenue and an increase in teaching below the college level. This could be viewed as an indicator of the earlier branching out of men and women into "non-traditional" occupations which has continued into the later 1970's.

One area of concern to educators at single-sex and coeducational institutions alike is the opportunities for young women to gain experience and self-confidence via leadership positions in student extra-curricular activities. A comprehensive study into all the leadership roles played by students in selected classes was not feasible given time and resources. Instead, eleven student organizations, ten of which have been in existence for the entire period, and one, the Organization of United African Peoples, which has only been in existence since 1971-1972 were examined, and the names and sexes of the major officers recorded (see Appendix II for the complete list of organizations and positions). Figure 10 shows changes over time in the percent of those positions held by women. The actual number of student leader positions changed after the merger because the Pembroke yearbook, newspaper, and student government were no longer in existence, but the percentages of women that appear on the graph are based on the number of positions present in that year.

As the data in Figure 10 indicate, there has been a sizeable decrease in the percentage of women in key roles in these important extracurricular activities. In 1967, almost half of the leadership positions were held by women; in 1972, the first year after the merger, only 15% of the leadership roles were so occupied. To some extent this very large immediate drop was to be expected. The Pembroke yearbook, newspaper, and student government were dissolved and, as new members of already-existing organizations and activities, it is reasonable to expect several years to elapse before women would again attain leadership positions. Indeed, by 1974 the percent of women holding leadership positions had risen to 25%. But in 1976 this figure decreased again. Thus, as of our latest reading on the matter, women at

Brown are considerably less involved in key leadership positions on the campus than were women at Pembroke prior to the merger.

Within a well-qualified student body, proficiency in intellectual pursuits is highly valued and accorded special recognition via prizes, awards, membership in prestigious societies and graduation honors. In an effort to determine the rate at which indicators of academic excellence have been bestowed on male and female students, the number of students who were recipients of awards, etc., were tabulated for selected years between 1961 and 1976. The results are expressed as percents with 100% equal to the total number of each sex in the various class years.

Figure 11 shows a decline in the percentage of women who receive their degree with academic honors in the post-merger classes from a high of 27% in 1967. It should be noted that the rules for eligibility changed with the introduction of the flexible curriculum at Brown. Prior to 1969, a student could receive a degree *cum*, *magna* or *summa cum laude*; after 1969 academic honor consisted only of *magna cum laude* calculated as one-half of all grades lettered A or Satisfactory with a mark of distinction. With a change in the requirements for a degree with honor, it is not surprising that there would be some dislocation and, in fact, women receiving degrees *magna cum laude* in 1976 was back up to 20%. Despite the decline, the percent of women receiving academic honors was higher than the percent of men for every graduating class selected.

It is interesting to note that while the percent of women receiving degrees with honor declined in the early seventies, their membership in the three prestigious societies on campus was gradually increasing. Since the change to the flexible curriculum, the selection requirements for the societies became more flexible also, with more emphasis placed on recommendations of faculty members in addition to overall grade average. The percent of women to be awarded departmental prizes and other individual awards has declined in every year but one, 1974, when there was a slight increase. This may in part be due to the fact that the number of prizes is relatively stable, whereas the number of women receiving bachelor's degrees from the university has more than doubled since 1961, the first year included in this survey..

The drop in the number of men graduating with honors in 1972 and 1974 as shown in Figure 12 can be interpreted in the same way as in Figure 11 for the women. Here again, the percent of men graduating magna cum laude increased in 1976, surpassing even the previous high point in 1967 of 18%. As with the women the percent of students inducted into honor societies in the post-merger classes increased steadily, much more dramatically in fact than the women.

The data on student indicators of academic excellence seem to show a temporary dislocation in the period immediately following two major events in Brown's recent history, the change to the flexible curriculum and the merger of the two undergraduate colleges. These events followed each other so closely in time that it is difficult to disentangle the influence of one or the other on the data presented in Figures 11 and 12.

LONGITUDINAL PROFILE OF BROWN STUDENTS, 1960 - 1976

I. TRENDS IN STATISTICS OF ENTERING STUDENTS

1. Scholastic Aptitude Tests: verbal
2. Scholastic Aptitude Tests: mathematical
3. High School Standing
4. Number of Applicants
5. Yield

II. TRENDS IN EDUCATIONAL PROCESS FACTORS

6. Persistence Rates by Field, women
7. Persistence Rates by Field, men
8. Career Interests, women
9. Career Interests, men
10. Student Leaders
11. Academic Excellence, women
12. Academic Excellence, men

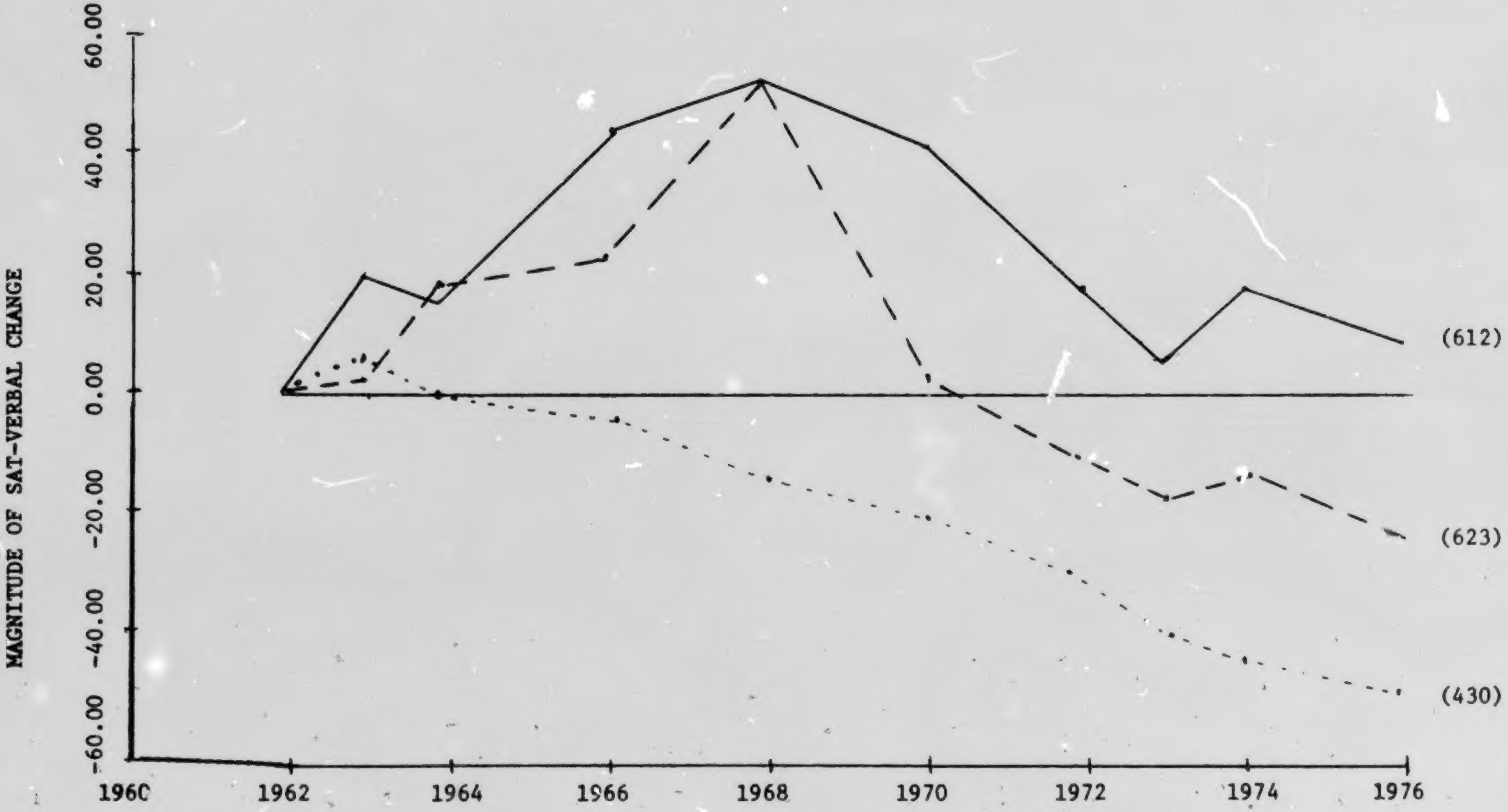

Figure 1

MEAN SAT-VERB CHANGES BETWEEN 1962-1976

Brown males - solid line Brown females - dashed line National - dotted line

Note: Data for Brown students are for entering freshmen, whereas the national data are for all students who took the SAT-V during that year, many of whom never went to college.

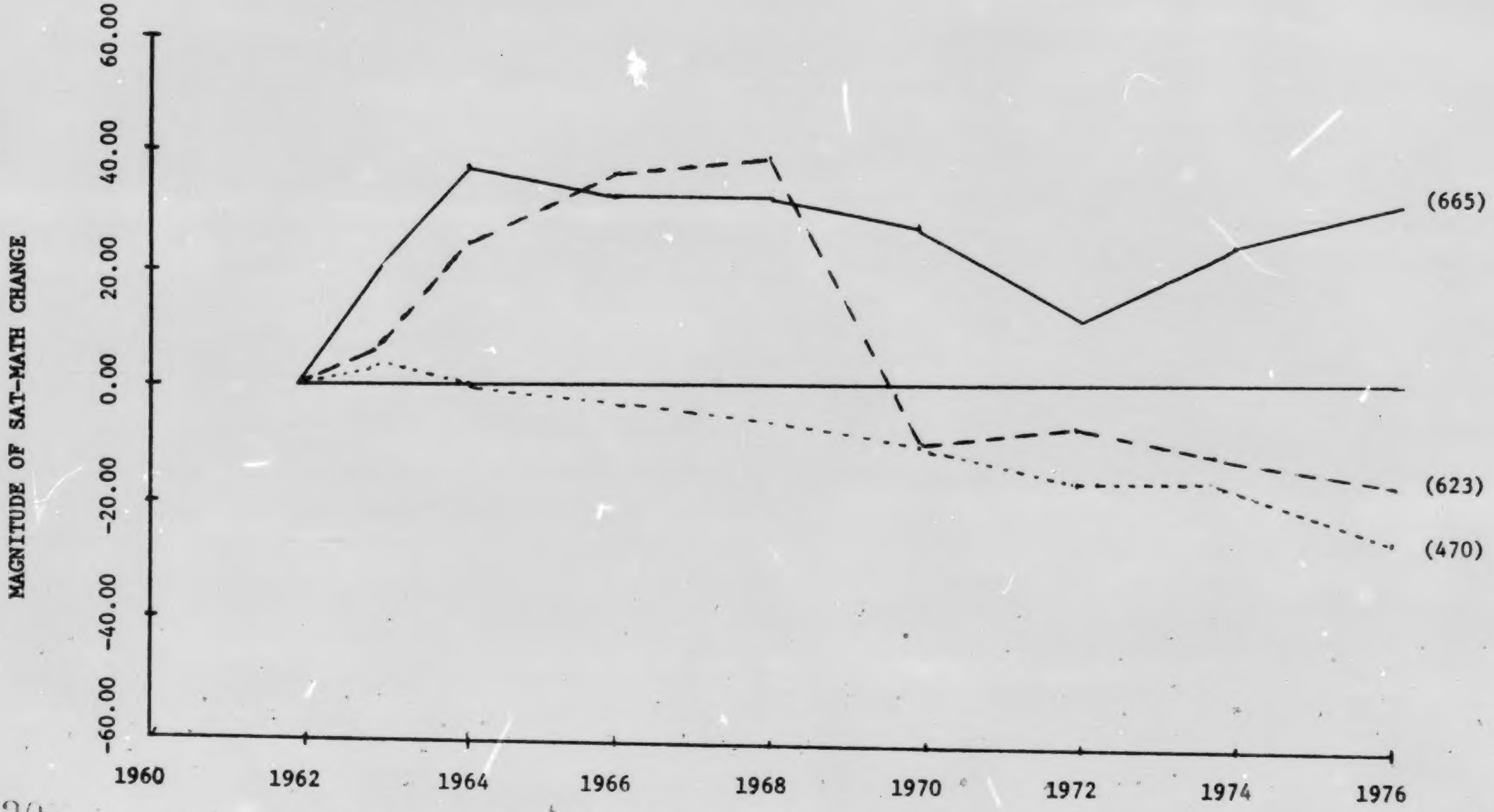

Figure 2

MEAN SAT-MATH CHANGES BETWEEN 1962-1976

Brown males - solid line Brown females - dashed line National - dotted line

Note: Data for Brown students are for entering freshmen, whereas the national data are for all students who took the SAT-M during that year, many of whom never went to college.

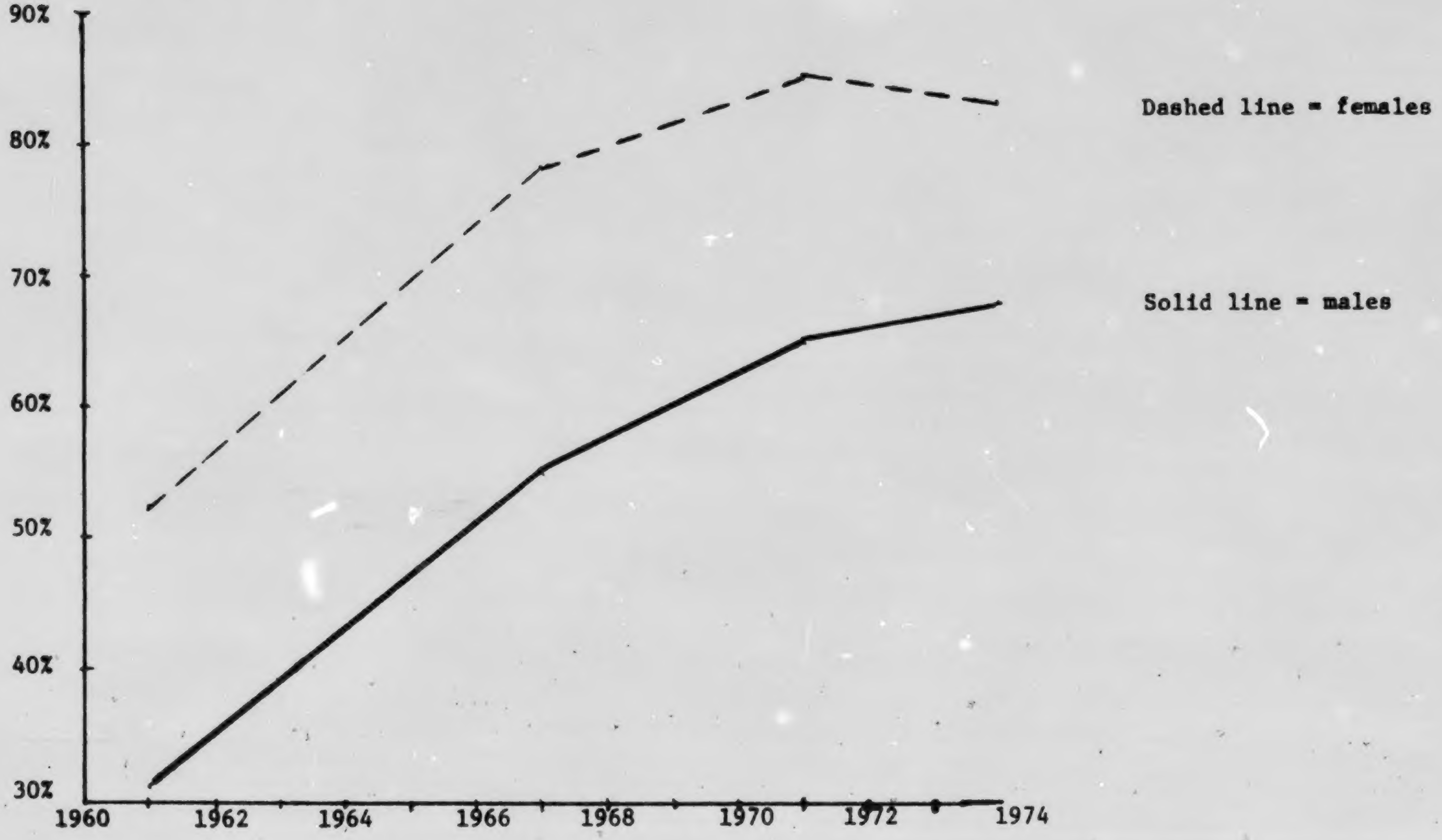

Figure 3

HIGH SCHOOL RANK

FRESHMEN IN 90TH PERCENTILE OR HIGHER

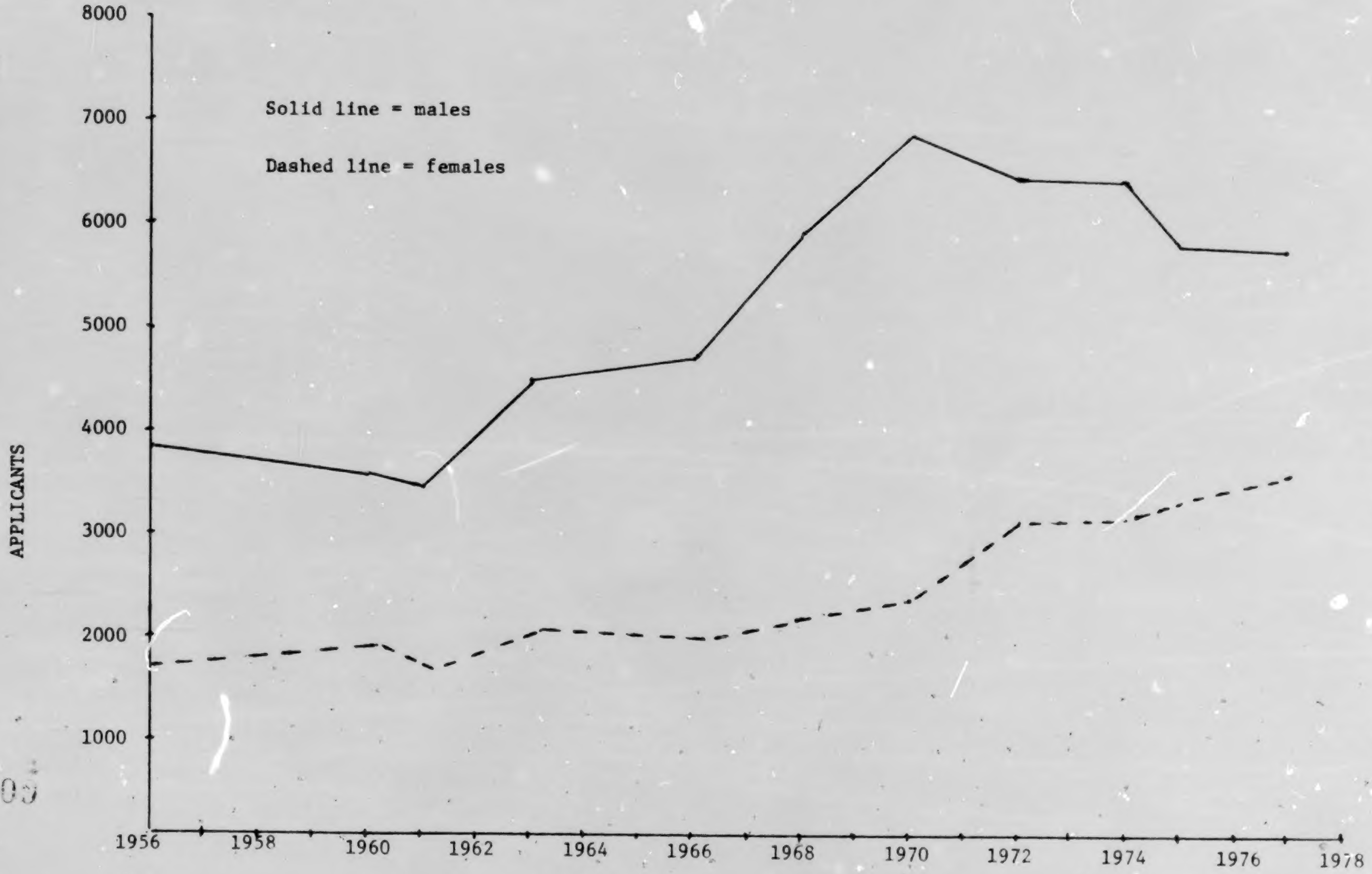

Figure 4

NUMBER APPLIED BY YEAR AND SEX

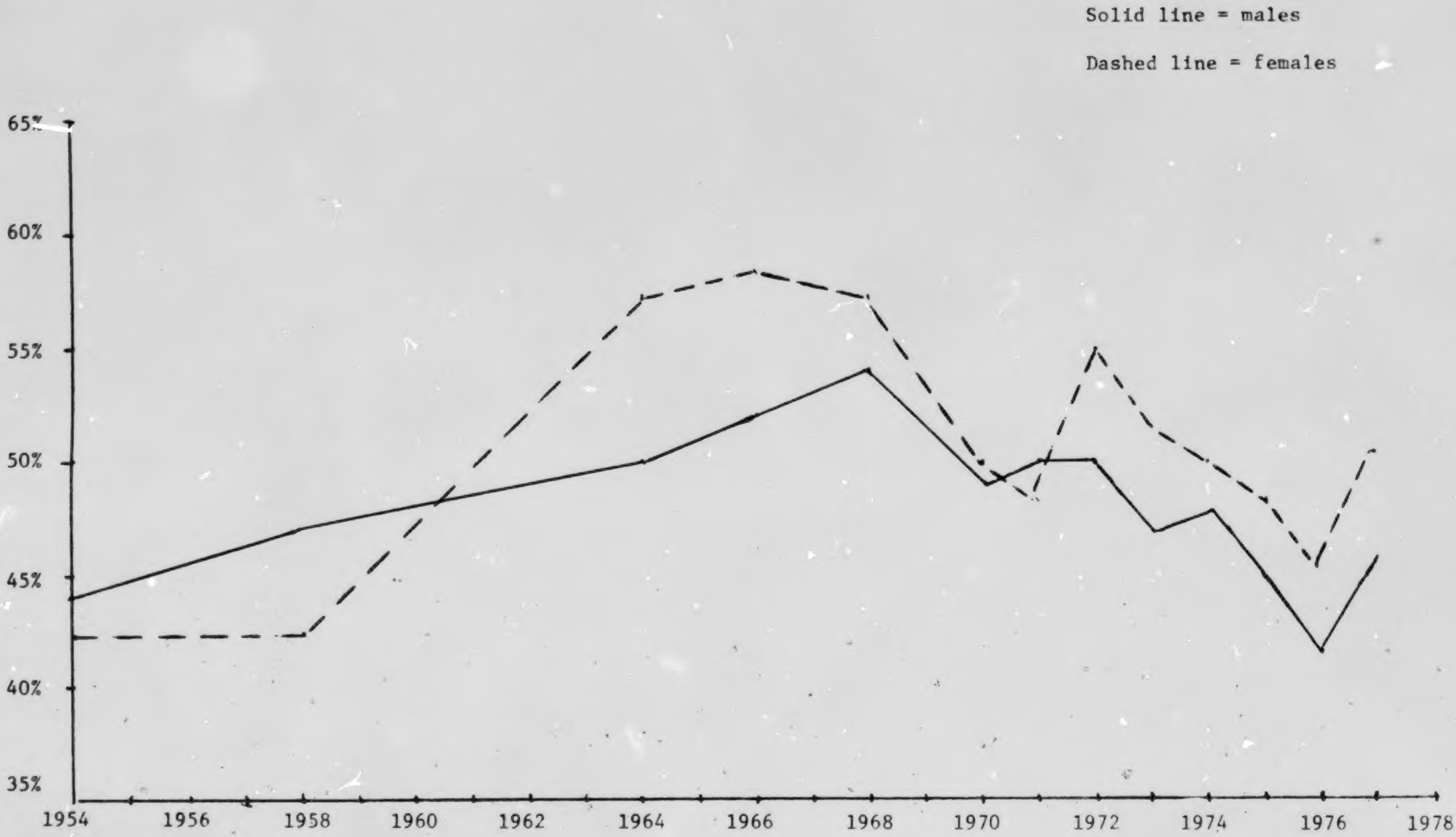

Figure 5

YIELD TRENDS BY SEX

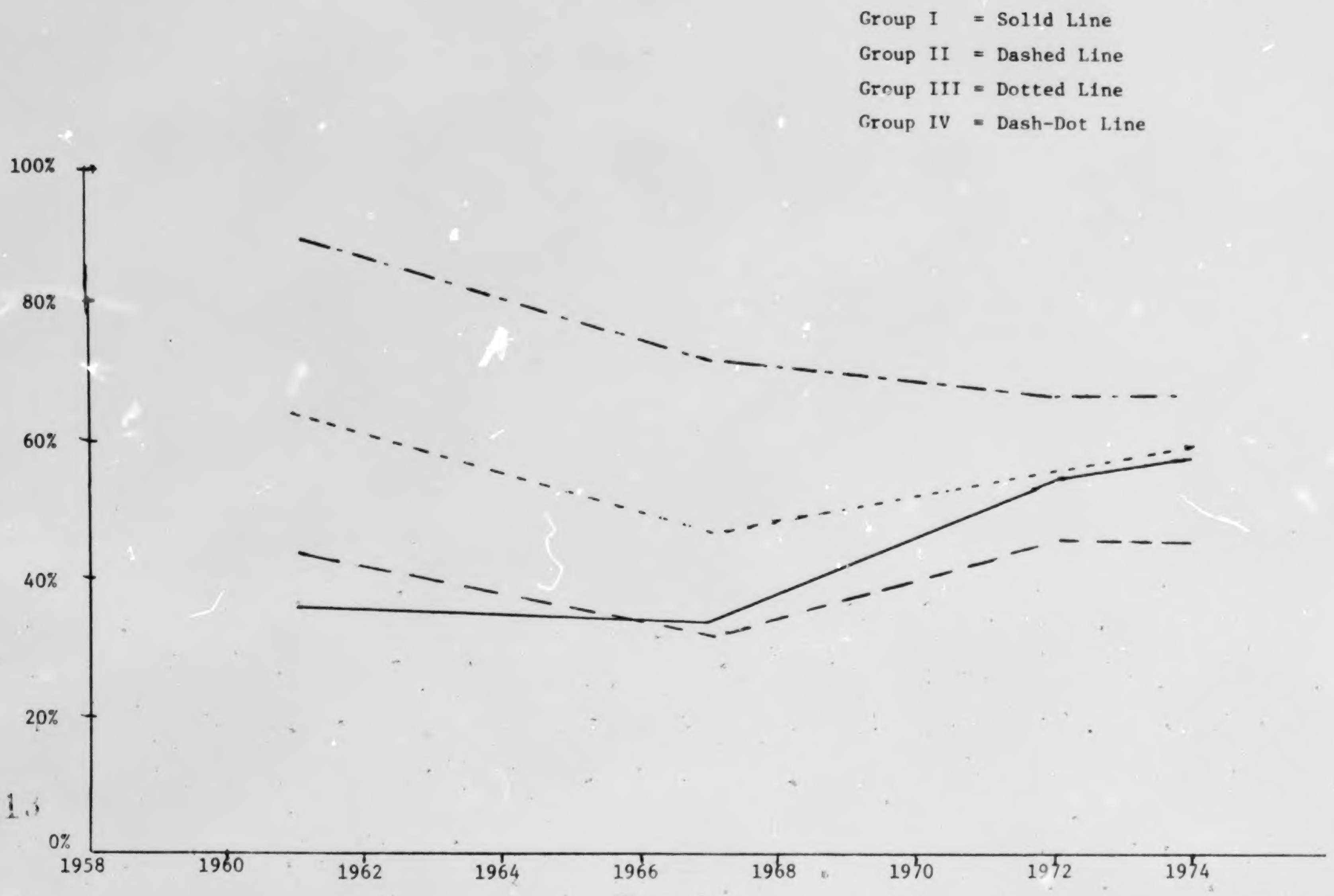

Figure 6

PERSISTENCE RATES BY FIELD - WOMEN

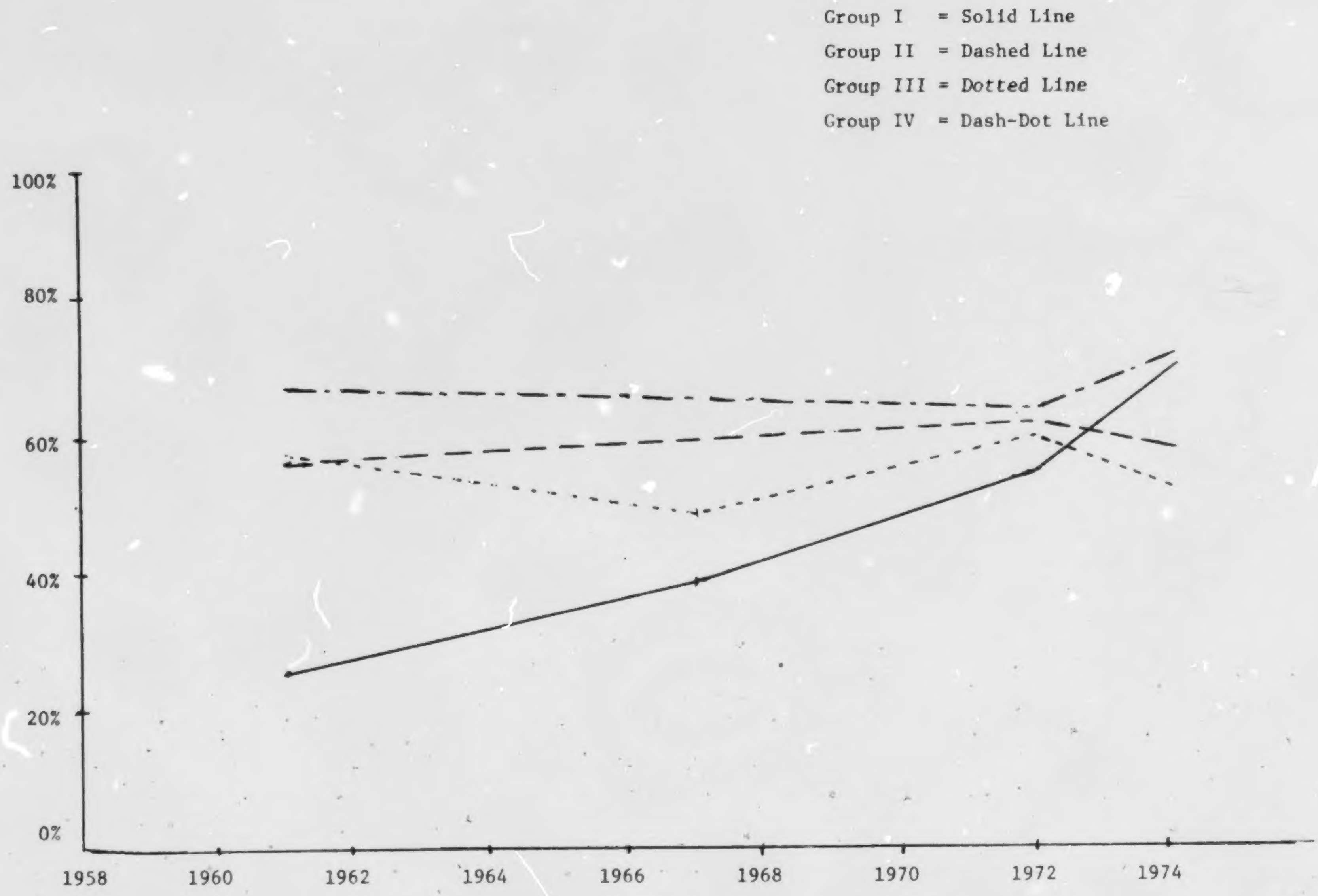

Figure 7

PERSISTENCE RATES BY FIELD - MEN

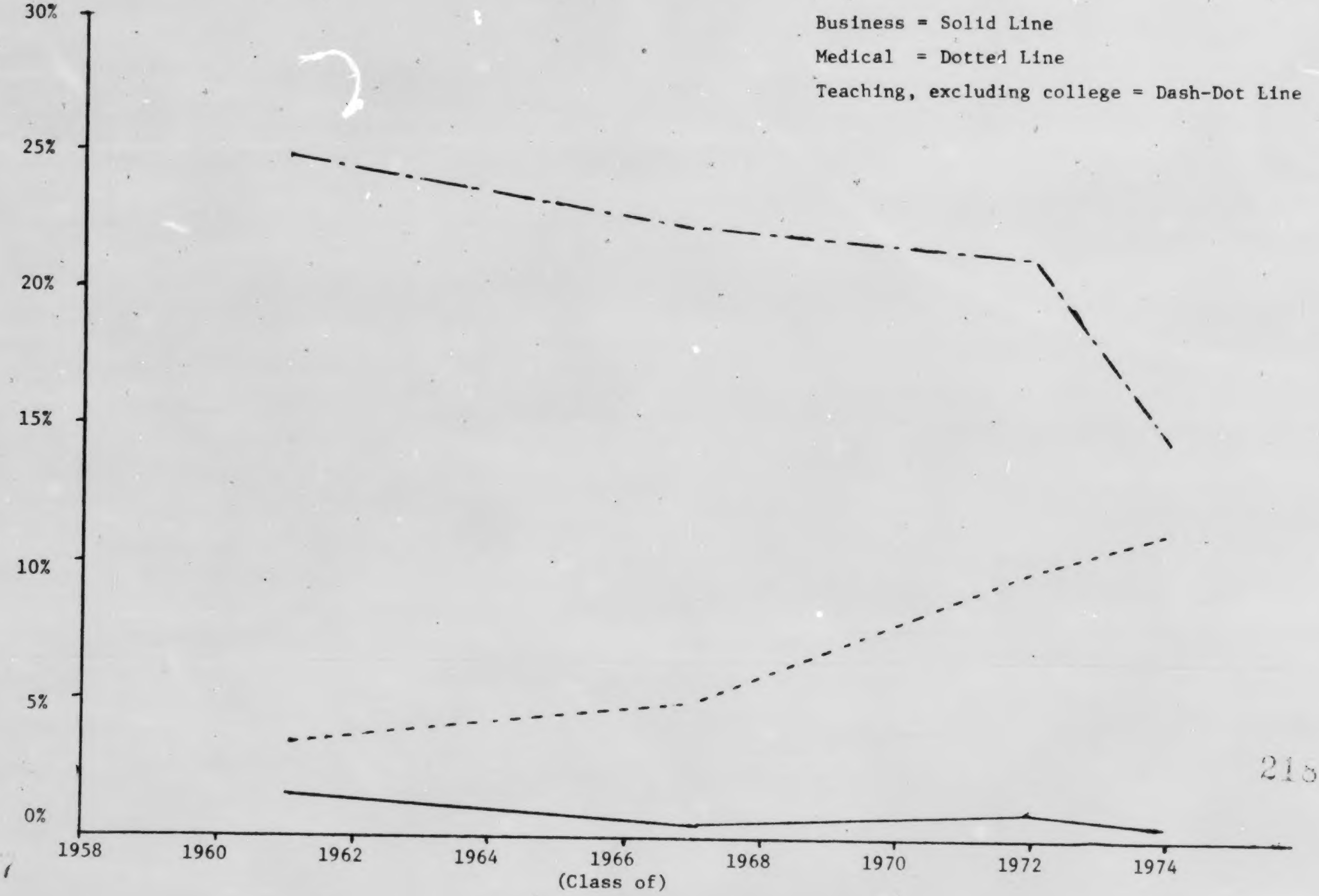

Figure 8

CAREER INTERESTS - WOMEN

SELECTED CLASSES AT PEMBROKE AND BROWN

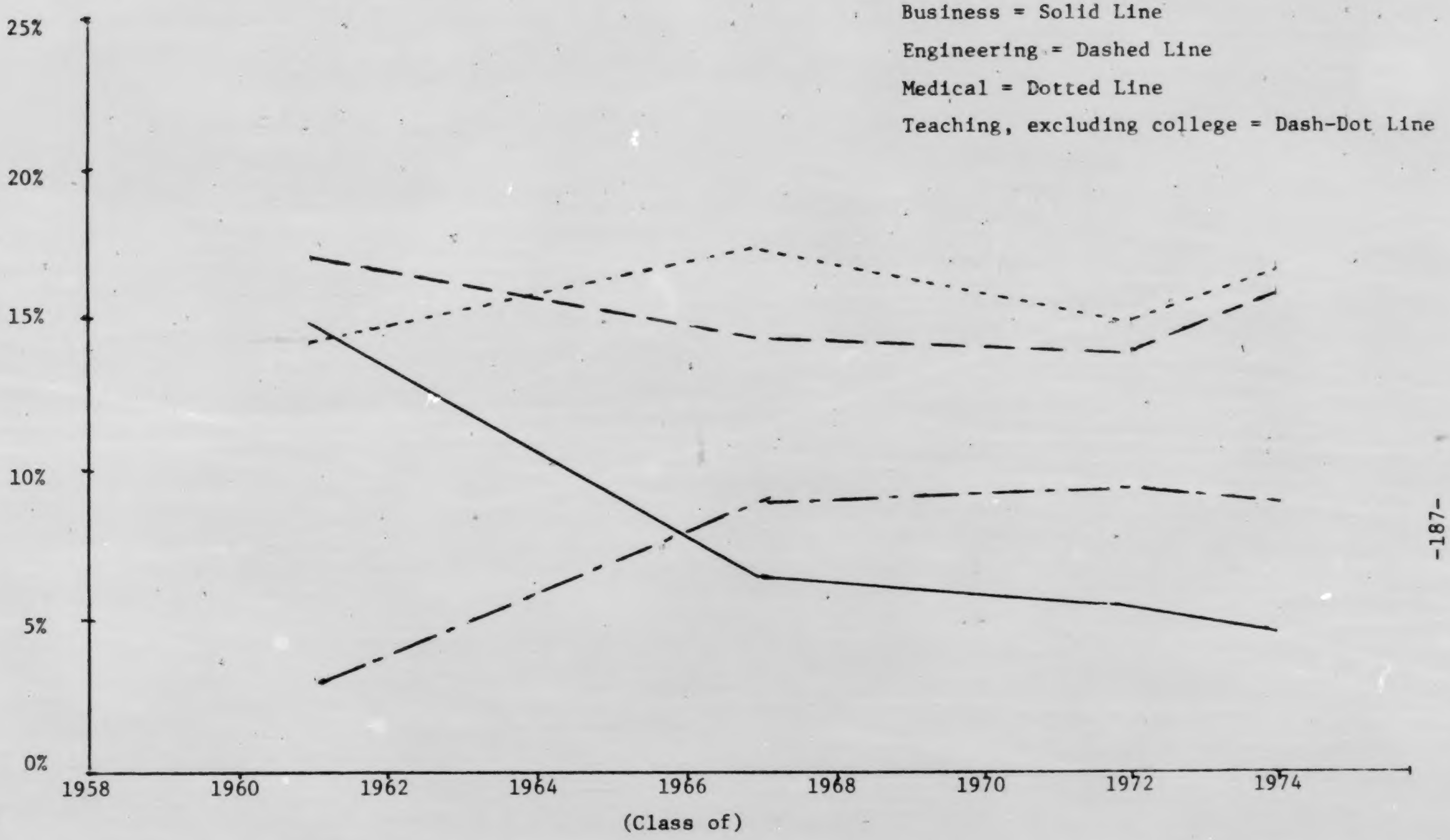

Figure 9

CAREER INTERESTS - MEN

SELECTED CLASSES AT BROWN

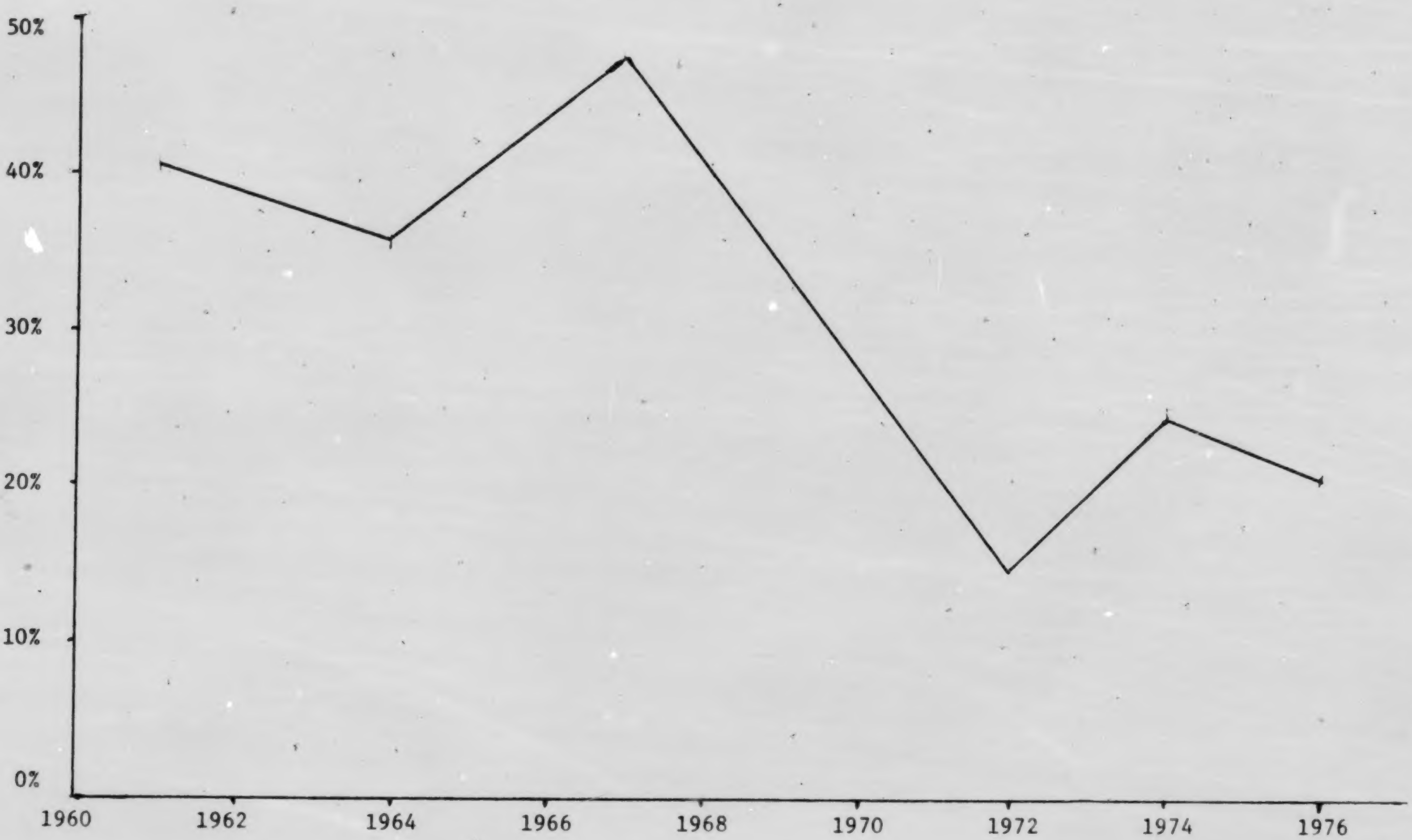

Figure 10

WOMEN IN LEADERSHIP POSITIONS

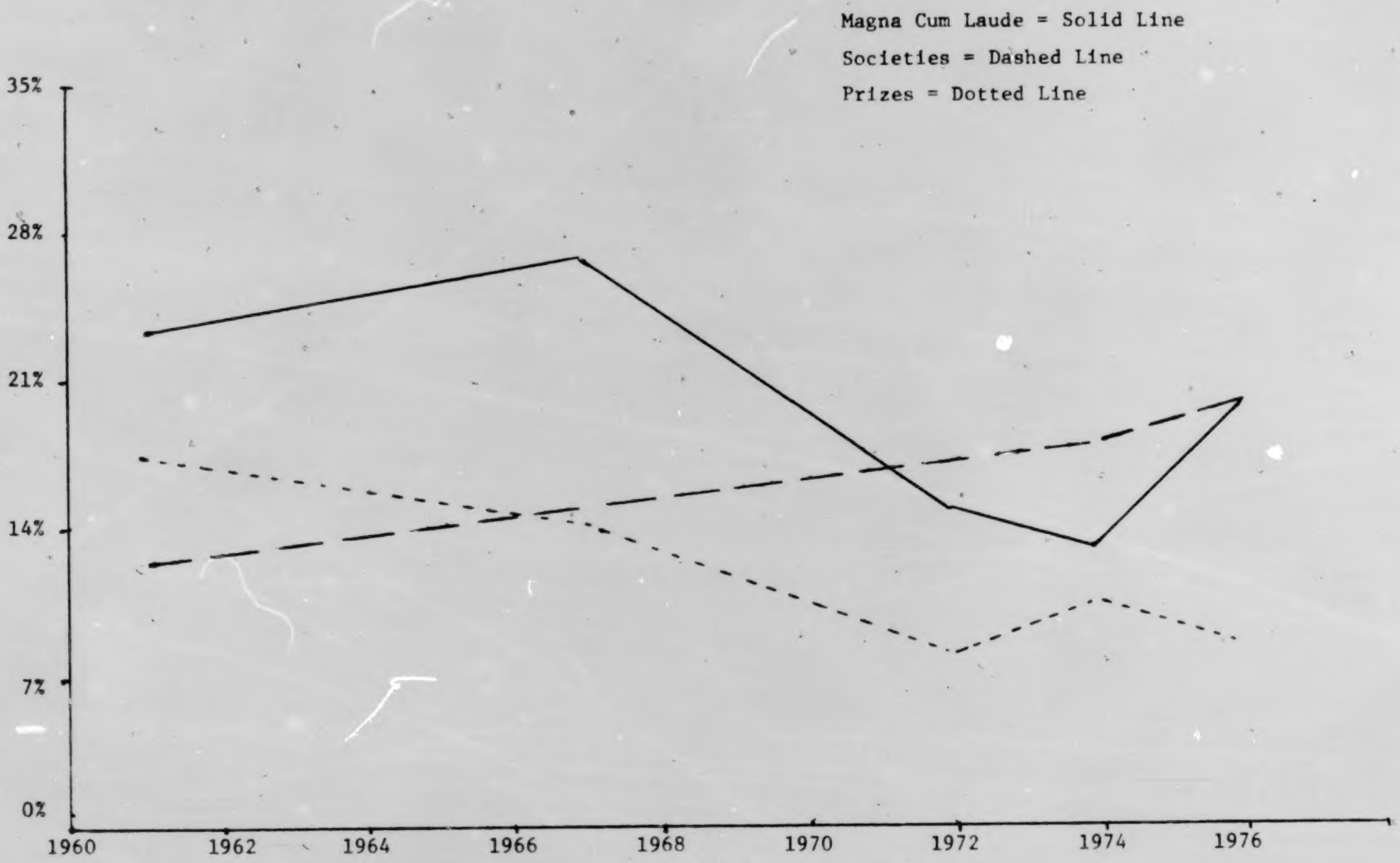

Figure 11

ACADEMIC EXCELLENCE INDICATORS - WOMEN

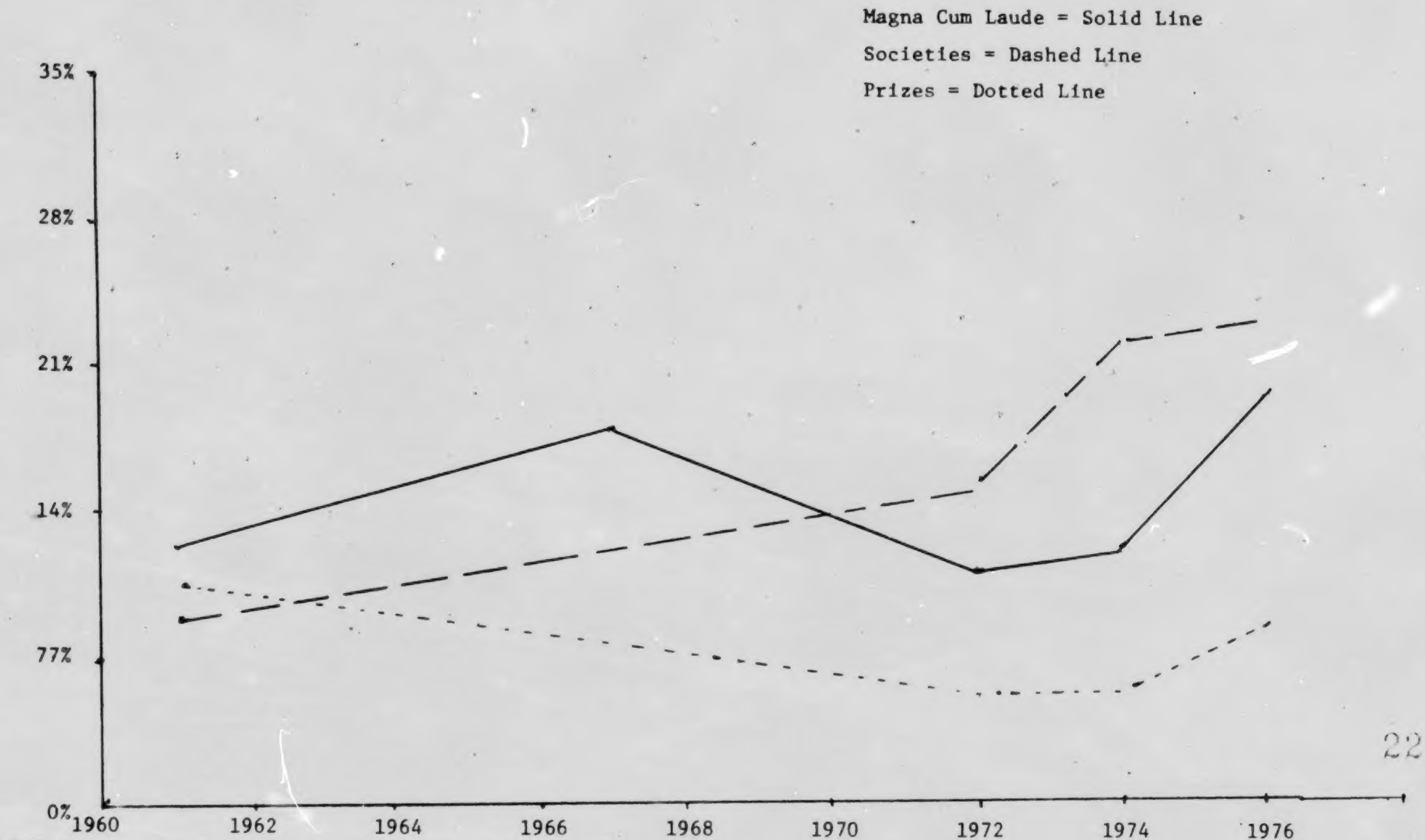

Figure 12

ACADEMIC EXCELLENCE INDICATORS - MEN

APPENDIX I

Group I

Astronomy
Biology
Biophysics
Chemistry
Aquatic Biology
Geology
Human Biology
Molecular Biology
Biochemistry
Human Studies

Group II

Applied Math
Economics
Math - Physics
Physics
Mathematics
Math - Economics
Engineering Economics
Computer Science
Engineering
App. Math - Economics

Group III

Anthropology
Linguistics
Sociology
App. Math - Psych.
Urban Studies
Psychology
Political Science
Psycholinguistics
American Civilization
International Relations
Public Policy Making

Group IV

Art
Italian
Literatures
German
History
Semiotics
English
Religion
Russian
Music
Philosophy
Ancient & Medieval Culture
French
Classics
Spanish
Comparative Literature

APPENDIX II

Student Leaders, 1961 - 1976

1. Student Government - President and Vice President
2. Yearbook - Top position and Business Manager
3. WBRU - Station Manager
4. Sock & Buskin - Top position
5. Brown Youth Guidance - Top position
6. University Christian Association - Top position
7. Hillel - Top position
8. Class Officers - President and Treasurer
9. Brown Band - Top position
10. Organization of United African Peoples (OUAP) - President
11. Student Newspaper (Brown Daily Herald, Pembroke Record) - Editor in Chief, and Managing Editor

THE COLLEGE YEARS IN RETROSPECT:
A UNIVERSITY IN PERSPECTIVE

Francine Deutsch and Carole Leland

INTRODUCTION

Historical Perspective

> . . . colleges are similar to Willy Loman -- they are liked, but not well liked (Spaeth & Greeley, 1970, p. 37) . . . but graduates of the private universities and liberal arts colleges are the ones to be strongly attached . . . They perceive the quality of their college as high . . . They are more likely than the graduates of any other kind of institution to say that it would be desirable to send their children to their own alma mater (Spaeth & Greeley, 1970, p. 46).

This sense of support, commitment, and attachment to private institutions and liberal arts colleges by their graduates is a major theme found in the General Report Prepared for The Carnegie Commission on Higher Education, written almost a decade ago. Colleges and universities care about their graduates and want them to care about their institutions. The alumnae/alumni provide a vital, continuing identity for a college; their dollars, their energies and their loyalties truly sustain *alma mater*. Their worth, however, goes far beyond class reunions and contributing to fund campaigns. They -- in their specific careers and general life styles -- reflect an institution's philosophy and investment; from them we can learn about the impact of the college experience and how well we are succeeding in our educational endeavors.

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Since educational institutions are embedded within a dynamic societal context, we need to comment briefly about the evolving ecological environment of education so our present study of graduates at Brown/Pembroke can be placed in perspective. Graduates of colleges during the Great Depression (Pace, 1941) were predominantly male, influenced by family, work goals, and recreational interests. They "were proud to have gone." By the 1950's, Havemann and West (1952) found that graduates were very different people. They reported, for example, that those majoring in the humanities were more "active, interested citizens" compared to graduates in other majors. But World War II was over and these students were experiencing the effects of the Korean War directly or indirectly. It was an atmosphere which promoted education as the solution to all problems. Schooling and income were reported to be positively related. By the late fifties, however, graduates no longer wanted purely financial rewards (Harris, 1960). Their interests were consistent during their four years,(Kelley, 1955; Strong, 1955) with college serving as a major arena for marriage of "likes to likes" and for marrying "well," especially for women. Relations and activities with future family, love and affection, and developing a personal identity emerged as major interests in a study of freshmen and seniors (Stanford, the classes of 1962 and 1965, respectively). Women, however, were consistently more interested in these areas than men; whereas, men from both classes reported that career or occupation was their major interest (Katz & Associates, 1968). Considering a more recent study (Miller, 1976) at Bryn Mawr, women from the classes of 1971 - 1975 have become more career-oriented and less involved in home and family.

We are just beginning to disentangle the decades of the 60's and 70's in terms of the meaning of education for our graduates. Education seems to be more than a time of selecting a career. It is a time of developmental progression toward commitments -- personally, interpersonally, and occupationally. According to Perry (1970), this activity is best achieved in a college climate. Perhaps, if the climate is conducive in fostering the development of commitments, then institutions reap the benefits of loyal, attached graduates.

Rationale and Overview

In this study, the graduates were particularly important because Brown University had changed its structure -- from coordinate men's and women's colleges to a merged coeducational institution. Two key questions remained: Did this major institutional change affect college generations differently? And, how do graduates feel about "their" university's new character? By determining what reactions graduates have about the merger, Brown University would be in a more informed position to decide the role these graduates could play in supporting the institution's future.

Since the internal changes at Brown occurred during a particular social period, we also were interested in identifying any secular changes that would have influenced these graduates. By doing so, we not only could obtain important reflections of graduates on their education, but also we could separate or at least tease apart the influence of institutional from societal change.

Three alumnae/alumni cohorts were selected to repressent particular stages in the university's development. The class of 1961 provides a picture of Pembroke and Brown prior to the activism of the 60's, yet before the university addressed the question of coeducation rather than coordinate education. Hence, we felt the turbulent impact of the 60's could be somewhat controlled by selecting an earlier class -- our first attempt in separating the impact of internal from external factors. The class of 1967 was chosen because it represents a more reflective, unsettled period for college students generally. It also was a time when Brown was considering an institutional change which had not yet reached fruition. Here we could focus on the impact of social upheaval, especially by contrasting responses from the previous group. Finally, with the class of 1974, we would be able to see how graduates feel about an institution which had become, in their years, structurally different -- a coeducational university. Also, the early seventies reflect a time of distinctive social change, especially in terms of women's roles in society. We were hoping to uncover the impact this had on Brown graduates and gently dissect it from the possible influences of the merger.

We asked 2859 people from the three classes to complete a mailed questionnaire in which they could reflect on various aspects of their undergraduate lives, indicate their educational and occupational experiences, and reveal their current activities, interests, and feelings. Almost one thousand graduates responded -- often in great detail -- despite the length and extent of our instrument.

What emerges from this survey is a firmly formed, positive portrait of Brown/Pembroke graduates who express their enormous endorsement, conscientious commitment, and even, at times, lighthearted loyalty. Many said: "Brown is Brown. I'd go there again." "Is there any place else? My grandfather went there and my dad." "I thoroughly enjoyed myself." "It served me well." What also is evident is that the merger did not affect students negatively, and that the impact of societal factors is apparent, especially in terms of sex differences.

The Class Profile

1961

The respondents in this class -- 162 men and 81 women -- are between the ages of 38 and 40 (97%), white (99%), usually married (80%) and predominantly Protestant (65%). Their political affiliations are roughly equal -- half indicate they are Democrats, half Republican.

1967

This group of 211 men and 135 women span the ages of 32 - 34 (97%), are white (97%), mostly married (77%), predominantly Protestant (59%), and tend to register Democratic more than Republican (53%).

1974

For this class, 219 men and 103 women responded. They are between the ages of 25 and 27 (96%), white (96%), and close to half are married (43%), and half are Protestant (50%). In contrast to the earlier classes, almost three-quarters of the respondents express Democratic as their political preference.

Marriage and Family

As expected, most graduates married after completing their undergraduate education, with a small percentage (10%) of people divorced or living with an opposite sex partner. It appears "likes marry likes" because spouses tend to hold a college degree or some postsecondary or professional degree, and because increasingly graduates report that they marry people they met at school. Men also indicate that their wives are credentialed beyond the college degree. Perhaps this reflects the preference of these women or mirrors how the economic demands of society are promoting dual career families.

Spouse's Level of Education*

	1961		1967		1974	
	M	F	M	F	M	F
College Degree	57	21	42	16	47	27
Professional Degree	1	25	3	28	7	38
Post Graduate Work	1	44	26	41	26	43

Spouses Attended Brown/Pembroke

1961		1967		1974	
M	F	M	F	M	F
16	28	12	36	30	60

Regarding children, as one would predict, older graduates (1961, 1967) have a higher percentage of children than younger graduates. However, most men and women in the class of 1974 do plan to have children at some point in their lives.

Children	1961		1967		1974	
	M	F	M	F	M	F
	89	89	70	59	10	6

Occupational Identity

A majority of men in each class work full-time, although the percentage is lower for the class of 1974 because many of them are still in graduate school. For women, the percentage of full-time workers has tripled to over 40% paralleling our shifts at a societal level (Deutsch, in press). Specifically, in the class of 1961, almost half of the women categorize themselves

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*The figures in this table and those to follow represent percentages of people responding to the particular question.

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as housewives or as housewives doing full-time work, but in the 1974 class almost half of the women responding indicated their "primary activity" was full-time work (43%).

For men in all three years, business attracted the largest number of workers. Although education attracted a substantial number of women workers in 1961 and less so in 1967, by 1974 their interest in education as a profession declined to a level approximating the men's. Both men and women show increased participation in the fields of law and medicine, but even though a greater number of men are in those professions, the shifts of women are more dramatic. These data support the secular trend, albeit relatively small, of women engaging in less traditional occupations. Women traditionally have gravitated to the field of social science and these data reflect that pattern; however, the increased percentage for the class of '74 no doubt also reflects the greater number of women in the labor market.

Present Occupational Field

	1961		1967		1974	
	M	F	M	F	M	F
Business	39	18	28	7	28	15
Education	15	40	15	22	10	12
Law	10	2	15	5	14	15
Medicine	10	4	10	11	17	12

Balancing Marriage, Family, and Occupation

What is dramatically evident in these findings is that women have shifted from being marriage and family-oriented to being career-oriented. When all three areas are pursued, women graduates express concern with balancing their roles, energies, and efforts. To illustrate these shifts, we include some randomly selected comments from women graduates across the three classes who responded to: "In terms of achieving your own career/occupational goals, what problems or obstacles have you encountered?"

1961	"Very conflicted upon leaving college about career vs. family. Have finally settled on raising a family as a full-time occupation."
1961	"When I first graduated, my career goals were vague, so I got married, the thing to do, and enrolled in graduate school. I stayed in grad school largely from inertia . . . For the last year I have been doing what I love most -- write."
1967	"I always wanted to be a teacher. Raising my family interrupted my teaching career. Now I feel its ok to try both."
1967	"Had to pay for law school by saving while working to help support us (husband in law school) -- took a few months off to have a baby -- combining baby and law practice."
1974	"Conflict between career and family responsibilities. Also, difficulties presented by a double career husband-wife team."
1974	"Very few obstacles. I am lucky in having parents to support me through medical school which I have always wanted. A family can come later, maybe."

Career Values and Aspirations

In keeping with the trends of the literature, these graduates value careers which offer autonomy, working with ideas, and working with people they like. For men and women in each class career advancement, good pay, and prestige appear less important. Women are relatively close to men in these work preferences. Thus, in the 1974 class the majority of the women stated they wanted most to work with ideas as did the men. Although men reported autonomy as an important aspect of work, in each class the difference between men and women narrowed (1961: men 66%, women 55%; 1967: men 66%, women 55%; 1974: men 67%, women 62%). Women also signified a slightly higher value to "making an important contribution to society" (1961: men 39%, women 53%; 1967: men 42%, women 51%; 1974: men 46%, women 63%), and to "being helpful to others" (1961: men 51%, women 61%; 1967: men 44%, women 52%; 1974: men 54%, women 68%).

Similarly, in a little over a decade women and men seem closer in their educational aspirations and attainments. For example, although fewer women reported having a doctorate, more of them reported aspiring toward such a degree than did the men. Our point can be made by adding the percentages of those holding the doctorate to those aspiring to such a degree (1961: men 15% + 3%, women 6% + 5%; 1967: men 16% + 8%, women 9% + 16%). Assuming people "do what they say," these figures suggest that eventually doctorates held by men and women will begin to approximate. Since such an argument is speculative, consider just the data from men and women planning for a doctorate; clearly the gap between the sexes is narrowing (1967: men 8%, women 16%; 1974: men 22%, women 17%).

There are some exceptions to our argument in the data as well. Men and women are quite different in terms of professional degrees held (1961: men 22%, women 6% ; 1967: men 29%, women 5%). Since an increasing percentage of graduates are planning for a professional degree, however, and because we don't know what attainments will be reached by the class of 1974, perhaps this gap between men and women, too, will narrow.

	Highest Degree Held				Highest Degree Planned					
	1961		1967		1961		1967		1974	
	M	F	M	F	M	F	M	F	M	F
Bachelors	31	46	23	38	0	0	1	2	0	1
Masters	31	37	30	44	7	26	11	18	19	26
Doctorate	15	6	16	9	3	5	8	16	22	17
Professional Degree	22	6	29	5	2	5	1	1	10	10

Particularly interesting is that many older women indicate plans for furthering their education, and these alumnae women greatly surpass men in their aspirations which is in keeping with the profiles of returning adult women nationally.

The Undergraduate Experience

Men and women who have been graduated most recently understandably show more sensitivity to what their undergraduate experience meant to them. For example, both men and women in the class of 1974 indicate in quite high proportions that they had gained confidence in terms of preparation for graduate school, and that they had experienced independent study and field work in their courses. We should point out that sex differences in these areas are increasingly less with each class. Perhaps, we are providing women with a better college climate since the merger because they have gained confidence in further academic and professional pursuits. Or, the change in curriculum toward independent study may have been instrumental in meeting the needs of women, enabling them to gain self-confidence.

The Undergraduate Experience

Areas:	1961		1967		1974	
	M	F	M	F	M	F
Field work	19	19	12	16	38	41
Courses with topics on women	2	1	1	2	17	41
Independent study	25	17	29	24	63	62
Worry over grades	71	77	78	78	53	63
Gained confidence for graduate or professional school	69	52	75	60	82	84
Off-campus internships	4	8	2	4	9	13

Many areas of life at Brown/Pembroke were remembered favorably. Since there was a high response rate and little variability among the three classes, the responses were averaged across the three cohorts and present a consistently positive portrayal.

- 50% were satisfied with residence halls;
- 65% with campus security;
- 70% with social opportunities and extracurricular affairs;
- 45% with faculty/student relationships;
- 80% with relationships with other students.

Graduates' satisfaction with career counseling drew the least favorable responses across the three classes. In fact, only an average of 10% of graduates in any class felt career counseling was "just" good. Considering this information along with undergraduate data from other parts of this study, it seems that career counseling is generally poorly received. We can neither criticize the merger for this, nor fault any particular curriculum changes;

however, because it has become a more total institutional enigma, and one not peculiar to Brown, our efforts should be directed at disentangling the problems related to usage from those associated with satisfaction.

Most important to the purposes of this study, the data underscore the positive outcomes these men and women feel they realized from their college experiences. In all three classes between half and three quarters of the respondents indicated they had increased their abilities to speak effectively write well, demonstrate leadership, make decisions, organize ideas, become creative, interact with the same or opposite sex, and to be persistent.

Although percentages which reflect perceptions that the institution helped promote leadership abilities are high, there is a consistent decline from class to class. Since the largest decline is between the class of 1961 and that of 1967, the merger may serve as a viable explanation. However, since women (1961 - 59%; 1967 - 45%; 1974 - 45%) show a consistent decline which is greater than men (1961 - 65%; 1967 - 57%; 1974 - 57%) during a time of encouragement of leadership roles, we can only speculate that these data reveal a general devaluation of leadership. Thus, it appears that the societal factor is over-riding the institutional one. To support our suppposition, we rely on some open-ended comments to the question: How have your occupational/ career goals changed since college?"

Female 1967	"I shifted from the public sector to the private for reasons of personal growth, income advances, and fewer problems."
Female 1974	"Why should I try to be an administrator which I now want to do when they are resistant to hiring women for management positions."
Male 1967	"After 4 years of the Navy I was tired of following and leading. I became self-employed as a land developer and only have myself to deal with."
Male 1974	"I am less interested in being a leader with my career contributions than in working in the community on social problems."

When graduates were asked whether they had acquired quantitative skills, we see a dramatic sex discrepancy. Men increasingly across the three classes said they learned quantitative skills (1961 - 44%; 1967 - 58%; 1974 - 65%). But, women's responses did not show an increase and also were below the men's (1961 - 37%; 1967 - 36%; 1974 - 40%). This gap between men and women in terms of self-confidence in quantitative skills, however, has not widened since the merger. The data from the undergraduate study, however, do show that the issue persists.

Across the three cohorts, graduates felt their professors had helped them with their lives by doing the following:

	% Reporting for at least 50% of professors
Given helpful advice	25
Helped feel confident of own abilities	28
Demanded high quality work	70
Interested them in their fields	42
Taught important skills	38
Positively acknowledged ideas in class	28

Less than five percent in any class felt that 50% of their professors had helped them with career decisions. Over three-quarters of the aggregate group reported that none of their professors had "ridiculed or humiliated me in class." Very few of these graduates generally reported uncomfortable perceptions of their professor/student relationships, but some sex and class differences should be noted. Women more often than their male peers indicated they felt uncomfortable because of an intellectual "put-down" from a professor which was related to sex. Similarly, the pattern persists for questions of sexual advances or sexual jokes.

Felt Uncomfortable Because of	1961		1967		1974	
	M	F	M	F	M	F
Sexual "put-down" by professor	2	24	0	29	2	31
Sexual joke by professor	3	21	1	18	0	36
Sexual advance	2	7	0	11	3	15

The highest percentages occurred, however, as a result of discomfort felt from "an intellectual 'put-down'" by a peer of the opposite sex. What the data seem to suggest is that overall the atmosphere does not offend large numbers of either men or women, but women seem more likely to feel some discomfort in the classroom, and perhaps have become more sensitive to affronts as our society has exposed sexual inequalities, thus once again suggesting the impact of secular trends.

Although these graduates express very supportive reactions to their life at Brown and Pembroke, they also see some areas where they might have received help in making career or educational plans. On the one hand, in each class large percentages support more interest in career planning from their professors, more internships and part-time work experiences, and better academic advisement. On the other hand, few alums seemed to see a need for greater flexibility in being able to specialize within the Brown curriculum, perhaps yet another measure of their satisfaction with the institution.

Might Have Helped in Career/ Educational Plans	1961		1967		1974	
	M	F	M	F	M	F
Time off from college or before college	52	43	43	40	49	37
Flexibility with Brown curriculum	26	33	25	30	18	11
Interest in career planning from professors	64	78	66	81	68	75
Internships for part-time work	56	67	68	83	65	75
Contact with alumnae/alumni	61	31	69	72	70	67
Better academic advising	50	62	55	68	59	66
Courses with better career-related objectives	43	52	42	62	37	42

Perceptions of Self and School

The data above provide some general notions of what these alumnae/alumni have become in the years since graduation and how they view the effect of their college years. The survey questionnaire also enables us to see how the men and women feel about their own lives, what kind of relationship they have with their university, and how they feel about changes in the institution as well as changes in the larger society.

Current Satisfaction

When asked to what degree they were satisfied with several aspects of their lives, the alumnae/alumni as a group reflect the values of suburban America where most have lived. Satisfactions emphasize family relationships and careers. Sex differences emerge in keeping with societal influences, however. The gap between men's and women's satisfaction with career/occupation has narrowed to the extent that this area of satisfaction is considered as the most important by all 1974 graduates. Interestingly, satisfaction with relationships with spouses and children has declined between 1961 and 1967. We really cannot comment on the responses from the class of 1974 because so few people have begun families. Satisfaction with parental relationships has increased, perhaps because of societal demands on finances; parents are needed more for support. Many of our open-ended comments reflect this sentiment, as mentioned earlier. The general implication seems clear, however. These men and women are highly involved in work and family and to a lesser degree with community activities. This suggests the persistent societal pattern of the "isolated American nuclear family" (Task Panel Reports Submitted to The President's Commission on Mental Health, 1978) and on the general apathy toward the betterment of communities (e.g., Goode, 1976).

Degree of Current Satisfaction	1961		1967		1974	
	M	F	M	F	M	F
Career/occupation	78	41	68	53	63	63
Family relationships:						
Parents	54	53	57	60	64	64
Spouse	71	61	70	69	56	57
Children	71	81	26	53	9	5
Leisure activities	40	49	41	44	33	24
Religious activities	42	41	28	31	33	25
Participation-community	32	44	21	31	22	25
Participation-betterment of society	34	49	22	31	22	25
Friendships	44	57	40	45	50	45
With community they live in	59	49	46	52	31	46

Role Particularly Satisfying	1961		1967		1974	
	M	F	M	F	M	F
Wife/husband	59	57	62	60	41	47
Parent	65	69	59	63	11	10
Occupation	77	46	67	57	63	66
Community activities	22	25	14	22	14	14

Relationships with Brown/Pembroke

Ties with their university seem to mirror their strong commitment to family. In the three classes, a high proportion of graduates indicated relatives had attended one of the colleges. Parents' attendance shows a rather consistent pattern; percentages of siblings and grandparents who attended have increased.

Relatives Attending Brown/Pembroke	1961		1967		1974	
	M	F	M	F	M	F
Parents	48	32	43	24	44	42
Siblings	26	25	25	41	22	27
Grandparents	1	4	8	13	20	24
Other	25	39	24	22	14	7

And, as we noted earlier, spouses seem more likely to be university alums as you consider the percentages across almost a decade and a half.

In terms of general feelings about Brown, well over half of the respondents express supportive attitudes:

Feelings About Brown	1961		1967		1974	
	M	F	M	F	M	F
Strong attachment	37	23	38	36	52	53
Generally supportive	39	52	44	43	31	31
Mixed feelings	18	14	11	13	13	14
Negative, not strongly	2	5	4	4	2	1
Thoroughly negative	1	5	0	2	1	1
No feelings specified	3	1	3	2	1	0

Their positive attitudes are also reflected by their reports of financial contributions (70-90% for the three years studied), service as a university volunteer (30-40%), and although in smaller numbers, attendance at class reunions. They feel close to friends made in college (44% of the men, 61% of the women in 1961; men 58% and women 65% in 1967; and 84% men, 80% women in 1974), and a somewhat surprising percent write, call or see each other regularly when you consider the geographic mobility of our society and the family and occupational commitments these graduates report. The drop-off in contacts with the passage of time since graduation should be of no surprise.

College Contacts	1961		1967		1974	
	M	F	M	F	M	F
Write regularly	7	26	5	22	12	12
Call regularly	4	2	5	2	6	6
See regularly	17	8	15	13	13	6

Further, more than 70% of the graduates stated that if they could make a college choice again, they would still choose Pembroke/Brown.

Reflections on Merger and Women's Roles

This study had a special purpose in assessing the impact of changing the university's institutional structure, i.e., merging the separate women's and men's colleges. And we wanted to see how these alumnae/alumni felt about what has happened to women in this society -- a question which has particular relevance to institutions which want to serve women and men equally.

First, the vast majority of women in each class stated they had been affected by the women's movement and at least half the males agreed they had been "somewhat" affected. While sex differences hold up in the degree of impact over the three classes, most dramatic is that 75% of the 1961 women had been affected "a great deal" compared to 33% in 1967 when the movement was especially visible, and 53% in 1974 when concerns had been established more in legal and organizational issues.

Affected by Women's Movement	1961		1967		1974	
	M	F	M	F	M	F
Great deal	13	75	32	33	17	53
Somewhat	52	25	45	54	52	41
Not at all	35	0	30	10	31	6

When asked what factors might explain why so relatively few women continue to enter non-traditional fields (e.g., medicine, engineering, and the sciences), women and men reported the following:

Factors Influencing Fewer Women To Enter Biological Science/Medicine

	1961		1967		1974	
	M	F	M	F	M	F
No role models	19	44	20	50	35	48
Parents discourage daughters	12	36	13	20	19	26
Men in field resent women colleagues	9	28	12	21	14	26
Women do not acquire needed backgrounds (math/science)	10	24	11	19	7	26
Faculty/administrators discourage women	7	25	6	20	6	20
Too demanding to combine with family	19	27	18	17	12	8

Factors Influencing Fewer Women To Enter Engineering/Physical Sciences

	1961		1967		1974	
	M	F	M	F	M	F
No role models	31	58	39	64	51	66
Parents discourage daughters	16	42	16	27	30	35
Men in field resent women colleagues	19	31	26	24	22	32
Women do not acquire needed background (math/science)	15	29	8	23	10	26
Faculty/administrators discourage women	10	23	6	6	7	6
Too demanding to combine with family	11	14	9	7	6	1

Consistently, women feel more strongly than men, who also agree, that these are the major factors influencing fewer women to enter biological science/medicine and engineering/physical science:

1) Lack of role models,
2) Parental discouragement,
3) Resentment of women colleagues by men in the field,
4) The fact that women do not acquire needed background in math and science.

Women across the three classes expressed increased concern with the lack of role models in engineering and physical science as compared with biological science and medicine. Only the class of 1961 -- again, more women than men -- believed that discouragement by faculty and administration might hamper women's entrance to these fields. More recent graduates find less conflict between family and these career fields -- a sentiment increasingly reflected in studies of current student cohorts. But greater concern was expressed about this factor vis-a-vis women entering biological science/medicine than engineering/physical sciences. The more general impact of these responses is that despite the women's movement and changes in the larger society, substantial numbers of women continue to feel inadequacies and barriers to their participation in these fields.

Finally, how do these graduates consider the impact of merging Pembroke and Brown? Conceivably, closing Pembroke -- the women's college -- would cause people to believe various aspects of campus life had changed, perhaps detrimentally. Women might have to compete more because men were present in classes. Men might aspire less. Marriages while attending school would increase. Resources could not be appropriately shared. These possible concerns are only representative.

These alumnae/alumni do not appear to think the merger produced any negative consequences. As the percentages below indicate, most men and women feel things have remained the same or improved. Those patterns hold particularly true for the classes of 1961 and 1974, although lower numbers of positive responses from the 1967 graduates are not offset with indications that things had "become worse." The phenomenon may be explained by the number of issues (e.g., turbulent times) other than the merger which preoccupied that class. Few other items show either sex or class differences that are noteworthy. Women from the class of 1961 split evenly on whether opportunities for women in leadership positions had become worse or improved (44% worse, 41% improved), and similarly for residential patterns. Women in the latter two classes shared positive perceptions of those aspects, not negative. And, for the class of 1974, a much higher percentage of men than women thought residential patterns had improved as a result of the merger. The single most striking thing about these data, however, is that these graduates feel their college experience has improved. Women consistently feel more strongly about improvements than men in terms of social life and leadership opportunities. Perhaps, they do so because they feel they should. Women are supposed to be enjoying school like men and are supposed to be getting leadership opportunities. To admit no improvement may mean to admit personal failure. The egos of women have been and probably will continue to be "on-the-line" in different ways from men. Also, to admit failure for men may mean they cannot accommodate to change or "roll with the punches." Finally, it appears that the contrast between the classes of '67 and '74 in terms of perceived improved educational experience as a result of the merger is dramatic, but we propose it is not for several reasons. First, the 1974 figures approximate the 1961 figures. Second, the middle cohort is the "turbulent group" given the times. They were not supposed to be positive about higher education. Third, the class of '74 is still close to their experience. Their university got them the job, the mate, or the parental approval. It is difficult to have a perspective -- to see the forest when specific trees loom forward.

Aspects of Campus Life As Result of Merger

	1961		1967		1974	
	M	F	M	F	M	F
Educational experiences:						
Worse	1	3	1	0	0	0
Same	69	74	46	49	64	73
Improved	30	23	9	5	35	27
Social life						
Worse	3	9	3	4	0	1
Same	48	54	34	24	24	29
Improved	48	37	19	22	76	70
Women's leadership opportunities						
Worse	2	44	4	10	5	10
Same	24	15	21	10	31	34
Improved	72	41	29	32	65	56

Aspects of Campus Life as Result of Merger (continued)

	1961		1967		1974	
	M	F	M	F	M	F
Men's leadership opportunities						
Worse	13	3	10	1	5	2
Same	72	81	41	45	86	90
Improved	12	16	3	4	9	8
Residential patterns						
Worse	14	31	6	13	1	1
Same	25	9	13	7	7	49
Improved	59	59	34	31	62	50
Career Opportunities for women						
Worse	1	3	1	27	0	0
Same	35	38	29	23	46	61
Improved	64	59	22	49	54	39
Career opportunities for men						
Worse	4	10	4	0	3	0
Same	80	37	44	44	85	91
Improved	16	13	4	6	12	9
Preparation for family roles						
Worse	9	1	3	1	3	1
Same	47	1	28	24	48	53
Improved	43	98	20	23	49	46

Conclusion

From the standpoint of these graduates, this institution seems to be doing things right. The graduates of three quite different college generations present themselves as well-educated, well-established persons who find satisfaction in work and family and who appreciate an atmosphere where they can be autonomous, work with ideas, and with people they like. They view their undergraduate experience positively and say that in those years they improved intellectual and social abilities which we usually associate with a university's goals. As graduates, they have sustained positive feelings and ties to Brown -- not only with financial support, but in college friendships they maintain and their assessment of what the university is now. Overwhelmingly, they affirm that given the chance they would choose Brown again. And, their reflections on the merger of Pembroke and Brown suggest that for them it is not a troublesome or significant issue. They indeed represent the committed, attached, loyal graduates that Spaeth & Greeley (1970) spoke of a decade ago. Each cohort expressed satisfaction with their experience and praise of the university's direction. Thus, our first question is answered: institutional changes -- merger -- did not have a negative impact. In fact, the sparse data that have direct relevance to that issue suggest that the move to coeducation may have been beneficial because it was in keeping with the times and expectations of the young adults experiencing their education then. Neither the instrument nor the nature of the Brown/Pembroke groups is the cause of this small data set, but rather the cause is the inherent difficulty of teasing apart the effects of change at a more general level -- the society -- from institutional change. And, thus our case rests. It appears that secular trends pour from these data showing that women are perceiving careers to be as satisfying as men do, for example. Ambivalence also prevails. Opportunities for women's leadership are thought to be lacking, while perceived improvement in the institutional setting toward this area is acknowledged. Men mirror these assessments.

As with any time of change, there are periods of transition, often marked by ambivalence, and this situation perhaps is no different. Also, women seem to have become sensitized to how they are treated, or should be treated, as is illustrated by their increasing discomfort in classrooms when sexual jokes are made by professors. Moreover, they show greater sensitivity than men to issues which encourage or discourage them from entering non-traditional fields. In an era when institutions are not being besieged by students as much as they are confronting declining resources and clients, these data should allow an institution at least a moment of self-appreciation. Although it is true that here we reflect the responses of only one thousand graduates of the three thousand in these classes, that is a substantial number of men and women who are providing a positive image of the university. (It would be useful to know how other college alumnae/alumni would compare, and this study should encourage future assessments both at Brown and elsewhere.)

The report also leaves some questions to explore in depth and offers a challenge to the creativity and sensitivity of a university administration and faculty. Alumnae/alumni have always been a resource, but perhaps we should ask them more often how they are doing, what they think, and how the institution is doing. Perhaps we should follow them over time to gain an understanding of change within a group. And finally, perhaps there are some different ways to involve alumni/alumnae in an institution's continuing efforts to recognize societal changes and reflect them in curricula and services. Career counseling is still a persistent, perplexing problem. Alumnae/alumni colleges and special seminars have been developed by many colleges and universities to serve students in their continuing educational needs. Perhaps institutions can also be taught — by people who do care about what they do. These alumns are by no stretch of the imagination "Willy Lomans" for Brown University!

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SECTION III

MEN/WOMEN/COLLEGE:
THE EDUCATIONAL IMPLICATIONS OF SEX ROLES IN TRANSITION

(Conference Speeches)

A BACKWARD AND FORWARD LOOK AT EDUCATIONAL ARRANGEMENTS FOR WOMEN AND MEN

David Truman

When I was invited to speak to this conference, it was suggested that the invitation might tempt me because it would give me an opportunity after my years in the vineyard or the trenches, depending upon the figure you prefer, to get some things off my chest. The temptation was overwhelming; that is what I propose to do. Not, I hope, that in my observations over the years I have not said what I thought, but merely that my instincts for survival have been strong enough so that I've not always said all that I thought on every occasion. Today, I intend to live a little more recklessly, but I hope not at unbearable length.

My remarks had originally been described as an historical perspective and analysis. My response was that I did not wish to confine myself to an historical perspective. Whatever stage-setting value that might have, it would deny me the satisfaction of making some observations about the future and doing a little exhorting, which I much enjoy. So that is what I am up to, and I'm ready to be hit by my own chips.

I, like you, shall be talking in these sessions about men and women, and that simplification we cannot avoid. I mention it only to record my awareness of the ultimate fact in the teacher's charge, namely, the importance of individual variation. I think, as I shall explain in a different context later, that we have misapplied this fact of individuality, making it a means of avoiding some fundamental responsibilities. But that sin does not destroy the fact.

David Truman is President of the Russell Sage Foundation.

We talk, as we must, in terms of statistical modes, though, as I shall also suggest later, we don't know much, and certainly not as much as we pretend to, about some of those modes. But we lose sight of the individual varieties at the risk of being almost wholly ineffectual. Moreover, keeping individual variations in sight, in all that we plan and do (and, incidentally, getting clearer on the defensibility of some of our modal statements) is critically important in a system that inadvertently and absent-mindedly committed itself a few years back to mass access to higher education.

Yet here we must be speaking of men and women, of modal patterns, in order to get something of a grasp on the challenge to us that lies in the apparent fact that the roles of women and also of men in our society are changing, diversifying rapidly; that in consequence, or at least in sequence, relations between the sexes are being altered; and that, despite these changes, the shaping, perspective-giving experiences of boys and girls have changed scarcely at all. I do not know this. I believe it, however, and I'm reinforced in my belief by, for example, my occasional, nauseated exposure to our great national ritual, brought to us by the electronic triumph of Western civilization and to which we piously dedicate the sabbatical day prescribed in Exodus -- the professional football game. There, still, are our male and female ideals: the barbaric, bruising male fighter and the simpering, prancing pom-pom girl. These exposures are educational experiences, at least for the young -- educational but nonschool, like many of the most powerful experiences -- and what do they say about changed sex roles?

Such things make our task more urgent and more difficult. Discharging the task acceptably will require colleges and universities to be not only more dedicated, but also more self-consciously analytical about the differing educational needs of the sexes than we have been before.

That this in itself would constitute a change is indicated by the substance of the discussions a decade or so back when the question of single-sex colleges and particularly on the shift from male to coeducational institutions began. Little of the documented discussion of this change had any educational content. None of it, to my knowledge, addressed or even raised the question of what special challenges, what distinctive issues, are raised by a decision to undertake the education of women. Directly and indirectly, attention focused on financial questions. Some sorts of market research were done, indicating that at that moment in time majorities of eligible secondary school students preferred coeducation; estimates were made of the alleged effects upon numbers of male admissions applicants if women were or were not admitted; and projections were made of additional capital expenditures required by a shift to coeducation. But that was about it.

No one can quarrel with the attention to finances. Institutional survival and market appeal must be prime charges upon academic administrators. Institutional suicide in the name of high principle is not an admirable course. But even if the coeducation decision was dictated by pressing financial considerations, consequent educational questions were also at issue. They were either ignored or treated in oblique, desultory, and ineffectual terms. Among the overtones of these ramblings, one sometimes hears the suggestion that coeducation would be "good for the boys," an observation that left no doubt of the seriousness with which issues of women's education were regarded. One occasionally heard semi-ideological, speciously principled statements to the effect that it was wrong to deny the blessings of a "Siwash" education to half the human race, which neatly dodged the issue, as high principle so often does. And, of course, one encountered the assertion that coeducation is the "natural" mode, which also ducked the question, since it should be obvious that putting high-spirited 18-year-olds in the cloistered setting of a college is, if the institution is to be taken seriously, inherently "unnatural." The issue is what kind of unnaturalness do you want and why?

Now it can be argued with considerable validity that there was no large body of good research on the special educational needs of late adolescent females -- or males. That is still far more the case than it should be. But to say that we lacked a substantial systematic literature is not to say that we were ignorant. Any sensitive teacher who has observed both female and male students should be informed enough to pose some substantial questions. And I'm interested to see that the highlights, findings, that were passed out in connection with this conference seemed not to be at variance with that observation. For the rest, examination of the patterns of socialization of girls and boys, of the option-closing pressures on both, and especially on girls, is sufficient to raise pedagogical, curricular, and counseling issues that run to the heart of the educational enterprise. In the discussions at some of the women's colleges these issues were prominent, but elsewhere they were essentially ignored.

The issue of differing educational needs of the sexes remains with us, however. And though it may be more urgent, more challenging as it affects young women, it also bears on the situation of young males. Confusion in role definition, self-doubt, and the anxieties associated with nonconformity, real or contemplated, are not a monopoly of the young female, though with her they may be more critical and more conspicuous. And if learning to value other women is essential to a young woman's developing her own appropriate self-esteem, which seems to occur more readily and effectively in a women's college, the young male has much the same problem, profoundly different in degree, but not really different in kind. I am persuaded, in any event, that the almost total abandonment of the single-sex college for males violated, at minimum, one of the few certainties in our educational world: that we don't know enough about education to make all institutions alike.

I'm not going to try to spell out the modal differences in the educational needs of young women and young men. This is not the appropriate occasion for that effort, and I am likely not the right person, although I have attempted it from time to time. It will suffice for present purposes if I borrow from myself -- self-plagiarism, I am assured, is not sin even though potentially it is something of a bore -- four propositions about the educational needs of young women, which again I note are clearly not negated by the pertinent findings of the study as reported in the highlights.

First, as a result of influences throughout childhood and adolescence, young women tend to have an unrealistically low estimate of the depth and range of their own capacities. Hence they tend to have restricted and unrealistically lower aspirations.

Second, young women who enter the labor force will find themselves in a competitive world. Thus they need to be able to compete, but competition of the wrong kind or at the wrong stage in their development is as likely to reinforce an unrealistically low self-estimate as to stimulate achievement. Many young women of eighteen have become sufficiently aware of themselves, have acquired a sufficiently strong and realistic estimate of themselves and of their capacities, so that they are ready to compete with their typically more aggressive and self-assured male counterparts in a coeducational setting. Many more, however, given persistent childhood socialization practices, are not yet ready to face such challenges without self-destructive consequences.

For their survival and for the realization of their capacities, they need the supportive environment of the women's college, where male-female competition and female-female competition for male approval are largely absent. In such an environment they can and do develop, over two, three or four years, the confidence and the psychological strength to compete with anyone, male or female, creatively and in ample self-knowledge. Since the self-sorting process of application and admission is unreliable, many of the unready end up in coeducational settings. There, if damaging results are to be avoided, counseling and other devices that may approximate the kind of s[illegible]ort given naturally in a women's college become imperatives.

Third, most young women will spend 25 or more years of their adult lives in the labor force, yet far too many of them have little or no awareness of the range of options open to them. Hence they are far too likely to see only career or marriage, and, among careers, primarily those conventionally allocated to women.

Fourth, the growing number of young women who have achieved some awareness of options tend to be insufficiently aware of the kinds of obstacles that they will probably encounter, including the realities of discrimination and the strains that beset a two-career family. Unrecognized or misunderstood, these are likely to have the destructive effect of reinforcing low self-estimates and to produce frustration rather than fulfillment.

I'm not prepared to defend this list with my last breath, but I am certain that some such set of propositions has validity and significant curricular and pedagogical implications. That is enough to set the requirements for our responsibilities in the future and to allow me to state some things that I am certain are necessary if those requirements are to be met reasonably well.

The chronic disease that afflicts the educational enterprise in these days is faddism. Now this may seem a strange statement from a former president whose experience has not excluded the extraordinary resistance to change that is characteristic of faculties. This is not a genuine paradox, for though the resistance is real, it is selective, parochial, and departmental. (I shall return to that point somewhat later.) Simultaneously, with such localized resistance, we saw in the late 1960's and 1970's faculties in most institutions from coast to coast abandon requirements -- eliminate most traces of structure from the catalogue. (I say "catalogue" because it would be inaccurate in most cases to call what it subsequently contained a "curriculum.") They inflated standards in a rush to join what David Reisman and Gerald Grant, in their distinguished recent book The Perpetual Dream: Reform and Experiment in the American College, call "the movement toward an over-optioned life." This rush may, in degree, have been extreme, but its counterparts are not hard to find, at least in this century. They are not encouraging precedents for one who hopes that the special needs of male and female students may be consciously met by colleges in the years ahead.

If that hope is ever to be met and if the educational enterprise is not to be a subject of fashion as the width of men's ties and the length of women's skirts, one major condition is that more -- or at least something -- must be known systematically about the patterns of cognitive and moral development among the late adolescents who are and will remain the principal objects of our concern. Our curricular decisions, when they are not capricious, implicitly rest upon some conception of the forms and rates of moral and intellectual development that are occurring in most students between the ages of 18 and 22 years. Even when we are simply following the current fad, some such conception is implicit in our actions, including, at times, the tacit assumption that no signficant pattern of development is occurring, that these are fully mature adults whose choices reflect a process of development that is essentially completed.

I am aware that some conventional wisdom and some scientific evidence point in this direction, but I find them unpersuasive. Anyone, especially a teacher, who has closely watched a student through these ages knows that this developmental process is going on, and rapidly, perhaps as rapidly as in infancy. One knows, for example, that Hamlet read by a 16-year-old is a wholly different work when read by the same student at 20. Now, one might say much the same of 30 or 50 or 70, of course. But what is consequential is not the fact but the rate of change. And surely we know enough to say that when such a rate is high, the nature of the associated experience or intervention has significant results.

Yet, our systematic knowledge of such development is essentially nonexistent. Aside from the suggestive and very preliminary work of Perry and one or two others, some provocative insights from Erikson, and the tangential but pertinent work on attitude change of Newcomb and others, the field is barren. Until we have solid and systematic knowledge at this level -- with male-female comparisons, by the way, since we would be unwise to assume that the modal patterns are identical -- until we have such knowledge, we shall continue to wander in the mazes of Cornford's Microcosmographia Academica, continuing to make, or to decline to make, curricular decisions in tortured ignorance.

But let's face another fact: even if we have this knowledge, inducing any substantial fraction of a faculty to acquire and assess it is a major assignment. It will call for a degree of presidential and decanal leadership that may not be permitted under the faculty union contract. It is unfortunate that the well-deserved disrepute into which schools of education have fallen has permitted faculties in general to ignore the whole corpus of work in educational psychology. Yet it contains many riches, even if the developmental studies that I have emphasized are, for the most part, not there. These resources should be a part of the thinking, possibly the training, though almost certainly not the pre-Ph.D. training, of faculty. To include them in the pre-doctoral training would entail two risks: it would invite the dilution of substance that has been the curse of teacher training at the primary and secondary levels, and, coming before substantial experience in the front of the classroom, it would lack the meaning and the urgency that the experience of teaching can supply. They are, however, the essential route to discussions of curriculum that may escape the balkanized limitations of disciplines and departments, but the road is not going to be smooth.

Without the developmental knowledge that we need, without the kinds of curricular discussions that must follow, I see no reasonable likelihood that the undergraduate colleges are going to be able successfully to navigate the treacherous passage between what we may loosely call vocationalism and an isolationist and exclusive preoccupation with the liberal arts, as we conventionally view them. The pressure now is from the former direction, and up to a point that is desirable, especially for young women, whose awareness of options typically is restricted and whose sense of the legitimacy of considering options is no more than nascent, an educational experience that opens no windows to vocation or only those giving some perspective on the noncontroversial callings of the academy, law and medicine, is inadequate.

But because the pressures lie in this direction of vocational concerns, so do the dangers, given our rudderless exposure to the winds of fashion. They will blow from more than just vocationalism in its simple form. They will come, they are coming, much more strongly from an associated pressure that can be called the Future Shock fallacy or half-truth. This is the proposition that, since so many things are changed and will be changing, everything is or will be new. It should be obvious that this is not the case, although we should never underestimate our ability to ignore the obvious. Computers, microwave relays, and space travel have not changed fundamental moral problems or the essence of tragedy. Why else, as a friend observed to me the other day, do Aeschylus, Plato, Augustine, and Shakespeare speak to us so clearly across the centuries? In a wild enthusiasm for what Robert Hutchins once called the "cult of immediacy," we will not avoid being prisoners by persuading ourselves that we are not prisoners of the past.

Which leads me to my last point. I am increasingly convinced that the colleges, through responsible individuals if necessary, but through institutional channels if possible, must aggressively examine and criticize what happens in the educational system prior to college. Such an effort must accompany putting our own house in better order, because what we may attempt depends for much of its effect on what has been done before.

As one who is deeply interested in women's education, I was brought to this conclusion a few years ago when I examined the report of the National Educational Assessments on male-female differences. One can quarrel with technical aspects of this work, but I doubt that technical deficiencies will do away with the shocking finding that the essential parity between girls and boys in quantitative, "scientific" reasoning stops at about age 12 and is followed by a steady decline in the relative quantitative and scientific performance of females in all later age cohorts.

I assume that we are not prepared to say that this result is biologically determined. I assume also that the schools are not the only influence contributing to the outcome. In fact, I would argue that general social influences combine with school practices to produce it. I haven't the data to prove my point, but I am persuaded that a system of free electives beginning in the junior high school and coming at a time when the adolescent girl is most sensitive to superficial stereotypes of the acceptably feminine, combines with a natural reluctance to take on reputedly difficult subjects to produce by avoidance a stunting of development in quantitative capability.

My concern here is in part that this kind of intellectual crippling condemns its victim to live without real awareness of the dominant force in modern life, science and related technology. To be quantitatively incapacitated and scientifically illiterate in these days is to lack any effective means of relating to, of understanding, the most significant influence on all our lives. And I am not committing the Future Shock fallacy. The quantitative basis of our intellectual life is not a matter of the future. It is not even new.

As one interested in women's education, however, I am also concerned that young women who are thus cut off from developing quantitative and related skills, and the victims obviously are disproportionately female, are also denied any likely access to the whole range of callings, not just in science, that might otherwise be open to them. If the basic skills are neglected in school, it is most unlikely that they will be acquired later. In the name of freedom of choice and respect for individuality, damage is done that is probably irreparable.

Finally, in larger context, I am concerned about this example of curricular foolishness because it illustrates what can happen if we continually fail to think of the educational system, to whose purposes we are committed, as a system and not a disjointed series of independent and unrelated segments. As I have noted over the years the dicussions of how to break up the sequence from K to 12 or 16 -- 8-4-4 or 6-3-3-4, or 6-4-4-2, and so on -- I have concluded that the only sensible answer is the fewer breaks the better. On either side of such a break, wherever one makes it, develops a mountain of ignorance about what lies on the other, especially the "lower" side. Status considerations seem to require that the high school teacher not know what occurs in the prior grades, and the college faculty member is likely to lose standing among his colleagues if he knows what the secondary schools are doing. Maybe you have noticed the same thing between undergraduate colleges and graduate and professional schools, even in the same university. So the fewer breaks in the system, the less ignorance among the practitioners.

Admissions officers are likely to know what goes on in secondary schools, and I sometimes think that good admissions people are the chief links in what is essentially a system of pluralistic ignorance. But admissions officers, of course, do not instruct faculties, certainly not on matters of education. The need for awareness and an ability to indulge in frank and responsible criticism of the system is real nevertheless. Though the colleges and college faculties live behind glass walls, they need to risk throwing some stones because no one else has much chance of seeing the problem in scale.

I have enjoyed looking backward and forward at educational arrangements, and if you don't see what I see in either direction, I trust I shall hear from you. Thank you.

POLICY CHANGE IN COLLEGES AND UNIVERSITIES

Rosemary Park

Every speech should have a leit-motif which accents the substance of the presentation. For these remarks I should like to choose the last words in a recent article on the European Left by William Pfaff in the New Yorker Magazine (August 7, 1978): "What was happening in the past seems now accomplished, what is about to happen has not begun." This judgment on a special contemporary situation can also be applied to our topic. I cite it to justify my conviction that any discussion today of Policy Change in Colleges and Universities must be in the highest sense speculative. There are no certainties, only trends and apparent directions, a situation more characteristic of American higher education today than in the past. But even then change was common. Indeed one of the more perceptive Marxist critics of American education, Alain Touraine, observes that "reform is almost a permanent process" in the Universities of the United States (The Academic System in American Society, New York, 1974, p. 5). Even if we allow for M. Tourain's Hegelian bias, it is possible to agree with his judgment particularly when we note that the changes he thinks are a permanent feature of our educational landscape have had a variety of sources or efficient causes.

In general, few of our historic changes in policy have originated entirely within the universities themselves. For instance, the several modifications which were associated with the Morrill Act were essentially the nation's way of coping with the increasing industrialization of society and

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with the need to professionalize American agriculture. It was the Congress of the United States which mandated the educational change and the creation of new institutions and programs. In similar fashion the dramatic quantitative expansion of higher education in our lifetimes was initiated by the G.I. Bill of 1944 which was a Congressional attempt to avoid further disruption of postwar economic life by channeling excess labor out of the market temporarily. I remember clearly the anxious committee meeting in which we tried to cope, as it turned out successfully, with the intrusion of returning military personnel into our institutions. The continued extraordinary development of scientific research beyond the war years we owe to the Sputnik surprise which truly impinged on American higher education from outer space.

In recent times only the difficult formulation of general education concepts seems to me to have originated within the academic community itself and even in this instance the early Columbia prototype grew out of a wartime course developed in response to government suggestion. The advent of affirmative action measures and of ethnic programs, two significant modern policy changes, were, as we all know, urged on the university by external groups. Clearly the American university has over time maintained a quasi-symbiotic relationship with its society so that our Marxist observer is surely justified when he notes that American higher education has not been the critic of its society but has rather been concerned with "instrumentality, progress and the integration of a New Society" (Ibid., p. 7). This characteristic has persisted despite the strong influences of the European universities which introduced us to the concept of the ivory tower with its interest in basic research, its aspiration toward value-free instruction and the consequent emergence of the concept of university autonomy.

The developments which this important external influence occasioned in American universities coincided with and were supported by an increasing specialization of knowledge. As Max Weber declared in 1919, "First-class scientific achievement today can only be brought about by the strictest specialization" (Wissenschaft als Beruf, Tubingen, 1922, p. 530). Productive as such specialization was for society, especially technologically speaking, it nevertheless weakened the university's capacity to offer a coherent undergraduate education of any cultural breadth. At the moment we are in an active phase of the cycle of recurrent attempts at establishing a rationale for undergraduate education, other than as a preparation for specialized graduate training. Since society, however, is still enamoured of the expert and the specialist, it provides little support to other efforts on behalf of the undergraduate. Within the university itself where these reforms must originate, the faculty attributes validity primarily to specialized knowledge and regards with obvious scepticism attempts at synthesis or large interpretative views. The model therefore of the European university led to constructive changes in American graduate education but its effect on undergraduate education was to introduce specialization and disrupt attempts at giving depth to general education, a problem which still persists.

In more recent years we have experienced the attempts of students to force the moral leadership of society upon the university. This quixotic effort at reform failed for lack of support by the larger society and because of the reluctance of the university to accept such a role. The violence which this refusal called forth resulted in the widespread public disillusionment with the university and its programs in which to some extent we still find ourselves. I note it because it appears to be an attempt to change the university from within, contrary to precedents. More careful examination may, however, reveal that even this dramatic endeavor at change arose in response to resistance to an unjust war and made use of the university as a site rather than expecting or aiming at reform in the university's programs or offerings, except tangentially.

Since those years there has ensued what Robert Bork has called "a flattening of the American institutional landscape" (Yale Magazine, Spring, 1978, p. 15). None of the traditional institutions, including the university, enjoys full public confidence. The symbiotic relationship of the society and the university is somewhat less constructive today, particularly because of the habit of some politicians who use the institution as a whipping post in furtherance of their own ambitions. One can conclude that the traditional sources of policy change in the university may become less effective in proportion to the present decline in esteem suffered by higher education. Though this would be contrary to historical precedent, it may, however, offer an extraordinary opportunity for the university to generate change in its policies and procedures in response to inner necessities, that is, in response to educational pressures, rather than continuing to react only to the needs of the outer society. Perhaps ironically the times seem to me ripe for an assessment of the university's future just because the university is no longer on center stage as it once was. It is also relatively free of ideological parties who tend in my experience to darken counsel and offend civility.

In this interim, before the future begins, what issues most urgently need attention? I think of two which lie wholly within the university's scope and of another which surely awaits on the future for genuine solution, but which nevertheless represents even now for higher education a revolutionary situation in which new options can be studied and cultivated by the university in its traditional reactive fashion.

The first issue which the university might direct its attention to is the disposition of time within our various programs. In its simplest form the question is aimed at discovering whether we teach any given subject or aspect of a subject at the time in a person's life when research in human development shows the individual is most ready. If we examine the whole sequence K through B.A., we might find that present evidence indicates that foreign languages should be taught in elementary school; logic might well be studied in 8th grade; computer skills could be mastered in high school. Such a study might identify dead points in the continuum, the 12th grade for example, or the first semester of the second college year, or the third year of law school. No doubt there are others. We speak glibly enough about the explosion of knowledge and yet we have students with excellent abilities who are bored in school, in college and in professional school. Some of the boredom arises from a lack of challenge to already developed capacities, which may depend less on individual differences than we might think. It would be interesting to discover too whether there are sex-differences in the age at which subjects can be most easily mastered.

In examining the entire spectrum up to the B.A. we should not forget the particular growth and enthusiasm for continuing education today. If education increasingly becomes a lifelong process, then professional and graduate education may need to be examined on what aspect, if any, could more profitably be studied after practice has begun. Are there educational merits to introducing students into the professional experience at an earlier

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age? Does a combined B.A. and M.D. program like that at the University of Missouri in Kansas City provide an affirmative answer? Does indeed the earlier practical experience serve to give the whole education focus and zest? If true, then perhaps most professional degree programs should provide alternate roads to the completion of study: one, a combined professional and liberal studies degree of somewhat shorter duration; the other the present arrangement dependent on initial awarding of the B.A. degree before professional study commences.

New programs in business administration, in education, dentistry, perhaps even in law might be developed, but first, I believe, it would be necessary to know what the educational outcomes are which the B.A. is supposed to secure. If we were more certain of our educational intentions at the bachelor's level, then we might find it easier to justify the present time sequence in higher education or to modify it to conform better to research results and to student needs and capacities as well.

Such flexibility in programming would complicate institutional life in many ways. If we were to experiment more broadly along these lines, then a period of possible declining enrollments is the ideal time to make such studies and changes. Unfortunately both require funding, though it might not be too difficult to find amid the federal agencies and the foundations. In addition, more options for students seem to me to require more counselling by professionals who understand not only the problems of the young adult personality, but who also share the intellectual interests and concerns of the faculty. I am not sure that such a system exists anywhere today. At the college level one might again make a virtue of necessity and offer young jobless Ph.D.'s who have aptitude and interest an opportunity to be trained for such academic responsibilities. In return, the institution would have to devise a status for such positions and a career line.

In considering all these problems incident to the sequencing of education I do not wish to suggest that saving time is in any sense a consideration. My concern is entirely with the validity and depth of the learning made possible by different calendars. For a generation with increasing life-expectancy I see no merit in curtailing the years during which the intellectual capital of a lifetime is to be acquired. The experiments I would like to see should be directed toward making education not just the necessary prelude to a credential but rather a meaningful, unforgettable experience in itself. And in all our studies it is well to remember that if we take no action, an all-knowing legislature may choose to invade our fragile autonomy and prescribe for us, even in such domestic matters as calendars and curricula.

The second area which requires consideration today is the relation between academic study and employment, or study and the world of work, as it is often phrased. This dichotomy has always seemed dangerous to me because it seems to imply that study is not work and is indeed excluded from the real world of effort. In some other countries today and in some institutions in the United States, students are fully subsidized. This policy is founded presumably on the expectation that the student can devote his full time to study and not settle for passable results in an attempt to earn money while studying to cover his expenses in whole or part. You may have noted the decline in the proportion of college costs financed by families. In 1929-30, for instance, families paid about 65% of the cost of higher education. By 1969-70 families paid only 39% (Carnegie Commission Higher Education: Who Pays? Who Benefits?, New York, 1973, A-1, A-13). To some degree the difference has been made up by government aid programs of various kinds, most of which, however, require a contribution from student earnings. The matter of student employment is therefore of increasing significance. In addition, the number of students declaring themselves independent of their families is steadily increasing. It would appear that if employment is to be a component of most undergraduate and graduate degree programs, then we need to be sure that it does not divert energy from study which in this era of the knowledge explosion could be expected to be more demanding than ever. On the other hand, if evidence shows that employment of some sort contributes to student maturation, then perhaps it should be required of all students. The positive concept of working one's way through college would not then be a romantic rationalization for lack of public subsidy, but an important element in the degree program, justified by educational outcomes.

In this connection one should not forget the models provided by the totalitarian societies which have required the young scholar to work alongside the peasant for a stated period in order to bridge the gap between the intellectual and working class citizens. Such mandated employment periods may be more necessary in those traditionally less open societies. Some evidence for its effectiveness may now be available which should be examined in determining the amount and kind of employment to be expected of our students during the years of their university study.

There is one further aspect of the problem which might be scrutinized, especially when the number of women undergraduates is increasing relative to male enrollment. What kind of experience do women students have in the job market? Are their subsequent professional aspirations limited by those early jobs and the lack of support for women's new role which can be encountered in many parts of the marketplace? Perhaps there is no evidence that the jobs women students can get during their degree programs affect their ambitions and later development.

Both the sequencing of the curriculum and the relation of employment and study are matters which lie within the university's domain and which require expert attention as does the disturbing problem of the young scholar vis-a-vis the tenured-in faculty. One college president noted recently that there is a decline in the number of young men entering the scholarly ranks as compared to recent years. He drew the interesting conclusion, as I remember, that then there would be more spaces for women scholars who apparently would not be frightened away from the profession as were the men. It would be an interesting prospect to find in a generation that scholarship had become sex-typed as a woman's profession. Of course, the more basic question concerns the very continuance of the scholarly tradition in America when so few openings in the ranks can be foreseen for either men or women. This like the structure of the curriculum and the relation of study and employment must look primarily to the university for solution and only secondarily to the large society.

The same, however, cannot be said about the sexual revolution and the university's relation to it. The university, God knows, did not initiate that profound shift in social policy. Indeed it can hardly be said to have welcomed it, and yet its policies can be nurturing of the revolution's ideals or can be obfuscating. At the time of the Morrill Act when the changes involved in society were great but by no means so profound as those brought into prospect by the sexual revolution, new educational institutions were founded to carry through the change. On occasion, of course, existing ones were transformed. We do not talk today about new institutions since the revolution is not primarily an educational one, but the analogy with the Morrill Act can be useful. It was only half a century after the passage of the Act that the aim of the legislation was really achieved. You may remember Wilson Smith's judgment: "There was very little study of cows in cow colleges until half a century after most of them were founded" (Journal of Agricultural History, XLIV, No. 3, p. 302). We should not hope to deal with our societal upheaval in any less time.

Unlike the other subjects I have mentioned which can find an initial solution within the university itself, this revolution which affects all social institutions will call upon the university not directly for leadership but rather for fundamental assistance. This can take the form of studying with increased sophistication the role changes in society and relating these to education practice. For instance, it is clear that continuing efforts must be made to counteract the sex-typing of subjects and, of course, of professions. It would be helpful to know whether the reluctance of American women to study mathematics and the hard sciences is rooted in the middle-class aspirations of leisure status for women. Today the nineteenth century's reading of a husband's economic success from the degree of leisure time at his wife's disposal, is no longer acceptable. Nevertheless vestigal remnants of this attitude may account for women's being educated through the genteel reading of books and not through physical contact with machines and chemicals. The wife who was a status symbol could not have dirty hands nor be immersed in noxious fumes. Much progress has been made in combatting this peculiar American assumption about most women and mathematics and science, but much remains to be done, and at as early an age as possible.

Besides this aggressive action some defensive manoeuvres may also be required. There will be a backlash from affirmative action programs which will place some women in difficult positions temporarily. Until they have demonstrated beyond peradventure their right through merit to the position, they may be accused of counting on legislation to open doors for them which they could not open for themselves. In such cases the university must be insistent on its commitment to affirmative action and meticulous in its appointment of only qualified candidates, so that women as well as men are held to the highest standards.

Though I do not believe the university can lead any social revolution and certainly not the sexual one, it does educate those who can. For them it is most essential to learn from the university that such profound shifts of social custom can never be accomplished in ten or even fifty years. Indeed, one of the most difficult parts of the revolution consists in preserving gains and building wisely on them. We may even discover, as we did with suffrage, that the times of progress are succeeded by years of total deflation. It was not so long ago that a younger generation of women wished to hear and know nothing about the struggles which brought them eventually the right to vote. Our present revolution will not be consolidated in less than a generation which means that the university will need to be conscious over a long period that the social justice represented by the women's movement will require diverse means of support and development, if the cause is to be transformed into acceptable community practice. The strength of conviction which today rests with women leaders may over the years find a home in university policies which will represent the affirmative action aspiration originating today. Then it may be constructive to realize how slowly academic policies change.

I have spoken about desirable changes within the university and about exploiting the years of relative disfavor with the public to seek solutions from within the university itself, rather than relying on the larger society to move us toward change. What, however, are the practical aspects of university change irrespective of whether it is mandated by society or chosen by ourselves? My reading of educational history leads me to believe that the basic responsibility for change in policies rests with the administration. Perhaps our failures at general education, if indeed they are such, could be attributed to a weakening of administrative style. I use the word "style" because I am loathe to speak of leadership which Warren Bennis has carefully taught us to distinguish from management. A recent study by the Higher Education Research Institute analyzes management styles or presidential styles, but does not refer, at least in the summary I saw, to this quality of leadership (*HERI Quarterly*, Vol. 2, No. 1). Actually the difference between management and leadership may consist of the time dimension in question. One could manage a five-year project, but one might give leadership in the solution of a difficult problem whose components one may not even control. But more important perhaps is the emphasis on value, a matter which came into discussion in the conference where a draft of this paper was presented. The injection of that dimension may be a part of the administrative function today, particularly when we are dealing with dilemmas of long-standing or with complicated histories where leadership rather than management is indicated.

We are all aware that in the past the university president not only managed the institution, but also spoke for it. Today this might seem the ultimate arrogance, since neither faculty nor students attribute intrinsic substance to the institution. The faculty have loyalty to their disciplines and to value-free research. The students see the institution as an instrumentality for personal advancement, not as an Alma Mater from whom one imbibes not only learning but ideals and standards of value. Indeed, Joseph Ben-David has characterized academic circles as pervaded today by "anomie," a disorientation attendant on too rapid social change (Centers of Learning, New York, 1977, p. 180). To speak for an institution under these circumstances and in the hope of effecting change in relation to perceived values implies something much closer to leadership than do the terms manager or facilitator. It may be that in the future which has not yet begun, a new kind of leadership for universities will develop about which we could speculate for a moment.

If the president is to speak for the university and be the initiator of change then he must be able to define the essence of the institution and the values associated with it. In the past the university has been the only institution in society whose concern was with intellectuality. Sometimes this concern was lacking in depth, sometimes it was frighteningly abstruse. But it has remained the only institution with this central concern which it tries to pass on to a new generation. Any leader of the university would have to have firm convictions on this point which would be associated with a further conviction, namely the possibility of attaining integrity in intellectual pursuits. For a society which depends as much as ours does on information, these qualities are essential. There seems little doubt that the future will expect nothing less of its university.

The insistence on integrity does not, however, imply any resistance to change. In the discussion of this paper, one speaker referred to the dialectical bridge which the university projects into society. This excellent phrase describes the form of change which can take place in the future where conviction about the mission of the institution confronts the demands of society and produces change in university programs and outcomes. In the present interim before the future begins, the administrator will wish to see the relation between his college and society as indeed a dialectical interchange which can only be fruitful if there is conviction about purpose at the heart of the discussion. There may be other values which can influence change in the university, but the importance of intellectual integrity to the academic community can be understood and integrated by both faculty and students into daily activity. It therefore provides a center about which the institution can reassemble and emerge from its present shadows, having established a consciousness of its own convictions and an efficient method for change. In both processes the administrator has prime responsibility, whether he be called in old-fashioned terms, a leader, or be given some more revolutionary, future-directed descriptive title. For the moment the agenda for change before the university is sufficient to engage its full effort. Fortunately research provides data of increasing significance for determining policy. The new administrator will utilize this and similar commissioned studies in a way previously unknown. Armed with relevant data and with clear convictions about the essential role of the university, the administrator can then speak for his institution when the future begins and be heard both inside and beyond the boundaries of the campus because the university will have learned to change its policies on its own initiative as well as in response to society's needs.

SEX ROLES IN TRANSITION

Constantina Safilios-Rothschild

I was asked to talk primarily about the implications that changes in sex roles or sex roles in transition have for coeducation. Such a talk may strike you as easy, but a discussion of implications is not that simple. Under an NIE contract, I spent a year and a half reading the literature on sex roles, and at the end of this time, the complexity of the issues was apparent. For instance, it is difficult to say: what *aspects* of sex roles are changing, how *much* change is evident, and what it all means. There is no question that there are sex role changes. Mass media bombard us with this information; television, movies, newspapers, and other modes of the media remind us continually. But in none of these communications are we given insight into what is really changing, let alone to what extent. In general, confronting degrees of change is always extremely difficult regardless of the topic. But, the question becomes even more difficult when data are derived from specific types of people or groups. In the case of sex roles, for example, most data are obtained from college students. Fortunately, however, a few people collected sex role data in the early sixties so we have a way of making comparisons among at least three different campuses between 1964 and 1974 or 1975.

I'd like to address the issue of what *is* changing about sex roles. One of the clear-cut changes is that college women increasingly see the working role as compatible with marriage and children. This really is a tremendous

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change for women. But whether it reflects a realistic change at the societal level is much less clear. That is, is this change permanent for the college women in these studies, and do the findings generalize across different groups? Either question is impossible to answer at this time, but we can consider how college men view women's working role, and the role of wife and mother. This indirect evidence does provide some indication of whether the change is at a societal level. Men do not uniformly share the view expressed by these college women; however, they are moving in this direction slowly. Basically, many of the changes in sex roles occurred in women earlier than in men, and 1974 seems to have been the turning point for men. Before 1974, college men's and women's views did not coincide in that women saw the working role as compatible with being married and having children, while men said, "I don't mind my wife working as long as when the children arrive, she stays home and takes care of them."

A 1975 interview study of college men presented clearly how college men felt. Namely, they still preferred that their wives work before they had children, but that, when there were children, they stay home and take care of them. If she didn't want to do that, they would go along with her working, and they might even learn to enjoy it. They would also prefer to have children, but if their wives felt strongly about not having them, the men would go along with that. They were beginning, therefore, to endorse an interesting value stretch: many of the men still preferred the traditional, conventional choices, but if they had to, were willing to go along with more "modern" options and even learn how to enjoy them.

Probably men began to change when they realized that most of the attractive women on campus did not endorse the traditional choices any more. Thus, men had to become more flexible and accommodating if they wanted to find an attractive wife. It seems, therefore, that changes have gone beyond the tipping point in that more than one-third of women have adopted egalitarian work and marriage expectations. In fact, on some campuses, changes may have gone so far that men and women who still stick to the traditional value package may be considered not "cool" or not "with it."

Another change in sex roles which is happening among college students, but even more among older adults, is that it is increasingly difficult to use gender as an important behavioral variable. Six or seven years ago, many of us put up a battle to make it mandatory for gender to be included in all types of analyses and breakdowns of data so that valuable information would not be lost. Increasingly, however, we can no longer make the very neat classifications on the basis of gender. All men or women do not have gender-specific values and beliefs, so a gender dichotomy is no longer useful. As a matter of fact, it is increasingly misleading, since it tends to create stereotypes which are no longer in any way valid. Increasingly, men's and women's values and beliefs overlap, and the significant ideological cleavages occur among men and among women.

I think that many people, and certainly many deans and presidents of universities and companies, have assumed that a woman in a particular position would automatically serve as a good role model for other women. Very often she would be, in fact, the very worst role model on earth. I am not trying to put women down, and I must explain what I mean by this. There are too many other structural and psychological variables that are much more important determinants than gender as to what happens to a woman or a man who is put in a potential role modeling position. One of these very important variables is one that I miss in the presentation of the research in this conference and that is, the existing sex ratio. For example, the number of women professors on a particular faculty is crucial for the kind of models they can be. One study which examined how women faculty members fared in departments of physics, engineering and chemistry, reported that, when there was only one woman in the department, she became a negative role model. It sometimes happened that this woman did not have the most pleasant personality on earth. Also, she was not interested at all in women, and, when women students went to talk to her, she ignored them and put them down much more than a man would have dared to do. Being a woman, she felt more free to be nasty to another woman. A man doesn't feel that free anymore. He may get a little more self-conscious about being openly nasty.

The crucial importance of the sex ratio can also be seen in the experience of women students in a coeducational environment. There are now some small group research studies which show the effects of the sex ratio when there is one woman with all men or two women with five men and so on in a classroom or training group. Students experience the university environment at a microlevel--that is, the classroom level--and the fact that a university is coeducational may translate to a very different experience for women students who are predominantly in classes where there is only one woman than for women who are in more balanced classes. Small group research carried out in medical and dental schools shows that, if in a group of seven or nine students (which is often the size of a training group) there is only one woman, she is usually handicapped in her ability to learn. She is psychologically and structurally marginal, and this marginality creates learning problems for her. I'll give two examples vividly illustrating how this takes place. One example comes from an anatomy class. The lecturer was showing how to open a corpse, and six men and one woman were standing all around him. The woman had a hard time seeing anything because the table was not very big, and she had to struggle to get between the men in order to see. She did not get much of a chance to practice with the scalpel, so, by the time the lecture was over, she had not learned much.

The second example comes from my observations on the Eagle during a training cruise of the Coast Guard Academy. Here, a small group was being told how the machinery worked. It was exactly the same scene as in the anatomy class. The machine they were learning to use was small. All the men stood around, and the woman, who was much more assertive in this case, tried to push her way through with her elbow. She managed two or three times to push the guys aside, but it got to be too much trouble. She then found a way to look through the triangle made by one man's arm: she made a rather pathetic sight. At the end of the lesson, the instructor asked everybody to repeat how the machinery worked. She was the one who did not know and had to be shown again. You can see what this would do to the image of women and to the self-esteem and self-confidence of the woman who is made to look incompetent.

In one of the experiments with small groups, they kept changing the sex ratio to find out if there is a particular ratio which is more favorable to sex equality. They found that, in a group of seven, when there were at least three women to four men, the situation was "normal." They also found that men's perceptions of women's competence also change drastically with different sex ratios. Men in a group of six men and one woman evaluate the woman in terms of stereotypes. In more balanced sex ratios, men tend to evaluate women in terms of their actual performance, of what they do and how good they are in what they are doing rather than relying on stereotypes. This performance-based evaluation of women helps them overcome marginality and become integrated.

In view of the importance of the sex ratio data, it would be important to break down the data available in the co-education study by prevailing sex-ratios in classrooms, in colleges, etc. Sex ratios should be looked at by university administrators and policy makers because they can be manipulated to some extent so that students are not placed in marginal positions which interfere with their learning ability. The effects of co-education on learning seem to be mediated through the prevailing sex ratio.

The gender dichotomy has tended to obscure our understanding of the dynamics of role modeling. We have tended to believe that only women can be role models for women. This belief may have come from the psychoanalytical model according to which people learn and imitate same-sex individuals much more than cross-sex individuals. The same model has made us put more emphasis on professors as role models rather than peers as role models because of the power dimension involved. But this power dimension may, in fact, interfere with modeling.

Role modeling has many dimensions, and it is important to distinguish mentorship from a more vague idealization process. One may admire and like someone who, in a vague way, may be one's role model. When we talk about learning experiences, however, mentorship is more relevant. Who has guided and helped women? Who has given them the information they need? Who has made them understand what it means to be a professional person? Who has given them an opportunity and exposure to experiences? If we ask these kinds of questions, we might begin to unravel the specifics of role modeling and to get away from the gender dichotomy. Some men may be excellent mentors for women, and some women may not. Whether a man or a woman is or is not admired as a role model may have much more to do with their personality than with their ability or willingness to be mentors. Also, a mentor may not necessarily be admired. At the University of California at Santa Barbara, graduate and undergraduate men and women students liked me very much and said it was wonderful to have a woman professor to whom they could relate differently than with men professors. But, in fact, it was my warm and expressive Greek personality they liked, something not necessarily related to my gender or my mentorship.

The survey data presented in this conference create an uneasiness in me. I know you also have interviews, but I think actual observations of classrooms and interactions are missing. The reported statistics of the few students who say their professors are sexist refer only to blatant (usually verbal) sexism of which students are aware. My experience this year, however, from observing classes at the Coast Guard Academy has taught me that men and women professors as well as students are not always aware of their own or others' sex-differentiated behaviors. Only observation studies can uncover this type of sexism in classrooms. I will try to give some examples.

A man teacher, after explaining the principles involved in a task, asks the students to perform the tasks. When men students are not successful in performing the task the first time around, they may be given additional information about the principles and are asked to repeat the task. When a woman student is not successfully performing the task, the teacher jumps in and helps her complete it without giving her the opportunity to successfully complete the task on her own. This pattern has very serious implications because it reinforces the direction of sex role socialization up to that point. Mothers and fathers and elementary school teachers follow exactly the same styles in teaching tasks to boys and girls so the sex role lines are not broken. In this way, women never have the chance to gain self-confidence about their competence to figure out things by themselves and to successfully complete tasks. They, therefore, are afraid to try out new things, to make mistakes and to learn on their own.

Another example is the professor of engineering who answers men's questons in a matter of fact fashion and women's similar questions with a preface of this kind: "I understand you must have difficulties with engineering. Let me know after class if I can help." The value judgment attached to the answer is sexist and may create problems of insecurity and low self-esteem in women students who may hesitate to ask questions freely when they do not understand a point. Men professors may also take a different physical stance when they ask questions of men than when they ask them of women, taking a very protective stance when they ask women. Teachers are not aware of these patterns, and it is only through videotaping of their own behaviors that they can begin to realize the implications of their behaviors. While up to now, I have concentrated on women students in co-educational context, it is also important to look at men and the special needs they may have. Men students have to deal with important psychological issues when women enter nontraditional fields that in the past were a male domain. This is especially true for young men socialized into traditional sex roles who make neat cognitive distinctions between men and women. When they find themselves competing in a masculine field, they have great difficulty handling the fact that a woman can do much better than they can. Here again, the sex ratio is very important because the fewer women there are in the previously masculine field, the more they are very highly selected to be super good students, and the probability is very high that they will get better grades than the men and that they will be at the top of their class which makes the situation even more threatening for the men. This is actually happening in some engineering schools, physics departments, and military academies, the male domain par excellence, in which girls often excel in scholastic as well as athletic and leadership achievement. Faced with such realities, men with a traditional sex role orientation experience a difficult and painful dilemma. One choice is to persist in their belief that women are inferior to men with serious implications for their own self-esteem, since they performed less well than the women. A way out of the negative consequences for their self-concept is to label the high achieving woman exceptional and therefore non-representative of women in general or to devalue the woman's achievement through claims of favoritism. The other choice is, of course, to revise their sex role beliefs, a course taken by those who are not dogmatic and have a high level of self-esteem.

Another great problem facing men in coeducational nontraditional settings is the need to learn how to reconcile love and sexual feelings with competition and women's higher achievements than their own.

An important component here is men's fear that their attraction to a woman would interfere with their ability to control their emotions and to perform their duties and tasks. Interestingly enough, men always complain about women's greater emotionality in comparison to themselves, mainly because women cry. During my interviews with Coast Guard cadets, however, I observed a great display of emotional behavior on the part of men when discussing their feelings and reactions to women at the Academy. The men's worst fears may have been realized when male cadets had difficulty disciplining attractive lower classwomen cadets and had to ask their women fellow students to carry out the disciplinary action for them.

It seems, therefore, that men as well as women face some special problems during the early stages of the transition to co-education, especially in non-traditional fields for women. Many of these problems are structural and could be solved when the transition to coeducation would be completed. We do need, however, some research as to what happens to men who enter non-traditional fields for them, especially when one or two men are found in all-women classrooms with a woman professor. Although their greater aggressiveness may help, and they may even be able to become the center of attention, we do not know what the implications are for their learning ability. There is also some evidence that highly competent and verbal professors can become reticent and shy in a working group in which they are outnumbered in a sex ratio of 6:1. Since physiological research has shown that the secretion of hormones and the level of aggressiveness in monkeys is largely determined by their social structural position in the group, it is important to determine the factors which facilitate or inhibit men's escape from the negative learning effects of an unfavorable sex ratio. Overall, the faster and the more complete the co-educational process, the faster any negative effects will be eliminated from the students' experiences.

COMMITTEE ON THE STATUS OF WOMEN AT BROWN

Jean Howard, Chairperson

FINAL REPORT

May 30, 1980

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THE CHARGE:

> That a Committee on the Status of Women at Brown be established which shall be appointed by the President and shall consist of not less than nine members, at least six of whom shall be members of the Corporation.
>
> The Committee shall assess the consequences of coeducation at Brown five years after the merger of Pembroke College with The College and shall make recommendations for further improvements in the educational opportunities offered to women. It shall have the responsibility of formulating and recommending to the Corporation goals for the University with respect to the education of women students, and the role which women are to play at Brown, including teaching and administrative functions. As part of its task the Committee shall assess the role which women presently play in the life of the Brown community and shall recommend ways in which the talents of women may be more fully utilized and their needs more fully met.

In attempting to execute the above charge, the Committee on the Status of Women undertook an intensive research study, the primary intent of which was to determine whether the intellectual and personal needs of female students at Brown differ from those of male undergraduates and, if so, whether Brown is meeting those special needs within the coeducational framework which has existed since the merger of The College with Pembroke College.

The study, partially funded by the Ford Foundation and the Rockefeller Family Fund, was conducted by a research team composed both of educators outside Brown and by a member of our own faculty. A culminating conference, "Men/Women/College: The Educational Implications of Sex Roles in Transition," was held in December of 1978 at Brown with the help of funds from the Carnegie Corporation. Progress of the study was monitored at all times by Maurice Glicksman, who served as the administrative officer of the grants, and by the Corporation Committee. The decision to engage research consultants from outside the Brown community was made in order to preclude the possibility of bias inherent in a purely internal self-study, while it was hoped that the involvement of members of the Brown community would prevent the mistakes or misunderstandings which might arise from a lack of familiarity with Brown's unique traditions and history.

The decision to focus primarily upon the role of the female student within the coed setting, rather than upon the status of women faculty or administrators, was similarly a considered one. Above all, it is the relatively small number of women in faculty and important administrative roles which is the obvious problem with the position of such women within the University. (At present 13% of the faculty is female and 43% of all exempt staff. Fifteen percent of the exempt staff at grade 49 or higher is female.) Affirmative action efforts are helping to alleviate the faculty problem, but retrenchment, extension of the retirement age, and tenure ratios all work to retard progress. Below, the Committee offers several recommendations regarding women faculty and administrators, but we felt that the bulk of our attention could more profitably be spent upon assessing the quality of the undergraduate experience for women, determining if that experience can be improved, and recommending where and how improvements can be made. Inevitably, the experience of male students provided the comparative yardstick, and comments and recommendations regarding both sexes are consequently offered at some points.

In formulating its recommendations, the Committee had available to it, not only its collective knowledge of the role of women, past and present, at Pembroke and Brown, but also the results of (1) an Institutional Profile which uses the years 1961, 1967, 1972 and 1974 to compare such things as the numbers of women applicants each year, the percentage matriculating who received admission, their choices of major, the number holding leadership positions, etc.; (2) sixty in-depth interviews with male and female students regarding all aspects of their undergraduate experience; (3) an alumni/ae survey involving the classes of 1961, 1967, and 1974; and (4) a survey of contemporary undergraduates involving the classes of 1978, 1979, 1980, and 1981. This same undergraduate questionnaire was also administered to undergraduates at Wellesley, Barnard, Princeton, Dartmouth, and the State University of New York at Stony Brook and the results were made available to the Corporation Committee. In each case the research team helped the Corporation Committee to digest and interpret the data collected, and their papers have served as the basis for much of this report.

At no point was the Committee's intention to second-guess the decision to merge Brown and Pembroke; rather, we saw our task to be that of examining the way coeducation is working at Brown today and of making recommendations for improving the way in which the needs of women, in particular, are served within that coeducational framework. Nor, however, did we intend to build a case that coeducation is inherently preferable to single-sex or coordinate arrangements. The purpose of comparing ourselves to other institutions was to help us to see where our particular strengths and weaknesses lie and to learn from others alternative ways of approaching particular problems. The study helped the Corporation Committee understand what the unique potential of coeducation can be for both men and women, as well as to understand some of the problems which it poses. What follows is the Committee's assessment of how full coeducation is now working at Brown and recommendations for its improvement.

Before beginning an examination of particular areas, however, the Committee wishes to state that on the whole Brown seems to have done and to be doing very well by the women in its midst. In the last decade, the percentage of women on the faculty has nearly doubled; women presently hold a number of important administrative posts such as Dean of The College and Associate Dean of the Graduate School; alumnae overwhelmingly report, not just positive feelings about Brown in general, but the perception that their undergraduate education gave them important skills and prepared them well for career and family life; when compared with women at other schools in the study, contemporary cohorts of Brown women stand up well in terms of achievement levels and satisfaction with their universities. Clearly, Brown is doing very many things right in regard to women. If in what follows, the Committee tends to focus on problems or potential problems, that should not obscure the generally positive cast of our findings. Our intent is to offer suggestions for further advances, not to denigrate the many achievements already attained.

PART ONE: GENERAL ASSESSMENT OF THE EFFECTS OF THE MERGER

I. Upon the Ratio of Men to Women Students

The majority report of the original Pembroke Study Committee recommended that, with merger, the ratio of women to men students be changed from approximately one woman to two men to approximately one women to one man. This recommendation has been acted upon by the Admission Office. Importantly, the undergraduate questionnaire revealed that 71% of Brown men and 78.5% of Brown women said that sex composition of the institution is important to them in choosing a college. 91% of the men and 82% of the women said that, if they could choose again, they would choose a coed institution which was 50% male and 50% female in preference to a single-sex, coordinate, or coeducation school with a different male-female ratio.

II. Upon the Attractiveness of the Institution to Students

Data gathered for selected years between 1957 and 1977 reveal that the number of women applying to Pembroke/Brown in that time has increased steadily, with a marked increase occurring in regard to women between 1970 and 1972, perhaps suggesting increased interest in Brown by women following the merger (see graph 1).* For men, the greatest jump occurs between 1968 and 1970, perhaps suggesting the appeal of the New Curriculum. Because of the number of factors influencing admissions decisions, however, one must be cautious about predicating simple cause and effect relationships. More importantly, the yield -- i.e., the percentage of students matriculating at Brown who were granted admission -- remained relatively stable throughout the merger period, suggesting that Brown continued to be attractive to the very best students in its applicant pool -- those to whom admission was actually offered (see graph 2). From our information it appears that the merger certainly did not decrease Brown's attractiveness to students and may have increased its attractiveness to women, in particular. Once at Brown, students attribute part of their satisfaction with the institution to the sex composition of the student body.

III. Upon the Quality of the Students

As has often been reported, SAT scores for college students have fallen steadily in the past two decades, though the decline at Brown came later and has been less precipitous than for the nation as a whole. For both men and women, the greatest decline in scores occurred at Brown in the period before merger in the years 1968 and 1970 (see graphs 3 and 4). Since that time there has been at Brown a general leveling off of scores for both sexes. Graph 5, moreover, reveals that in the crucial period between 1967 and 1972, the percentage of students admitted to Brown who ranked in the 90th percentile of their class or above actually increased. From the data available, it is impossible to attribute either a positive or negative effect to the merger in regard to the quality of Brown's undergraduates as measured by objective criteria such as SAT scores and class standing. Brown has continued to attract outstanding students at a time when other schools have faced declines in quality. The merger clearly did not result in a less qualified student body at Brown and may well have been a factor in the relative stability of Brown's attractiveness to outstanding students in the 1970's.

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*Graphs and Tables are in the attached Appendix.

IV. Upon the Number of Women in Campus Leadership Positions

As graph 6 indicates, one of the most startling findings of the study came in reference to women in campus leadership positions before and after merger. Obviously, the abolition of the Pembroke yearbook, newspaper, and student government cut off certain avenues by which women had gained leadership experience. During a period when the number of women on campus was increasing rapidly, the percentage of total leadership positions held by women decreased (see the appendix to graph 6 for lists of organizations included in the survey). It should be noted, however, that even with this decline in the number of leadership positions held by women after the merger, senior women at Brown today still express more confidence in their leadership skills than do women at single-sex schools.

RECOMMENDATION: That the university consider sponsoring leadership training programs aimed particularly at women students.

V. Upon the Number of Women Faculty

Table 1 indicates changes in the percentage of regular, full-time women faculty for selected years from 1961-62 to 1979-80. The Pembroke Study

Committee recommended an increase in the number of female faculty at Brown, and the fact that 50% of the student body is now female makes it highly desirable to have a faculty with a significant proportion of women professors, if only because of the mentoring and role model functions performed by women faculty for women students. For example, when the alumnae were asked why they felt more women did not enter the sciences, women in all classes overwhelmingly reported that the lack of role models was the most important factor in explaining that phenomenon. A number of students at Brown have never had a female professor; the majority have had only one or two women teachers, TA's excluded. Right now 13.1% of the Brown faculty is female. That represents an enormous increase over the 5.9% of the faculty which was female in 1967-68. Perhaps even more significantly, women are moving up through the ranks. In 1975-76 only 9.9% of the associate professors were women; now 23% of associate professors are female. It is clear that the university has been making a tremendous effort to ensure increases in the number of women professors at every rank, and confidential comparative data indicate that we are doing well in regard to the hiring and promotion of women professors in comparison to other Ivy League institutions. Nonetheless, we have a way to go to reach "full utilization," in regard to tenured faculty in particular, and, as more women receive Ph.D.'s, the ultimate goal should be a faculty in which the percentage of women professors more closely equals the percentage of women students.

RECOMMENDATION: That the University vigorously continue its efforts to increase the number of women on the faculty, especially in the senior ranks, and especially in fields such as the sciences where there are not many women at any rank.

RECOMMENDATION: That during the next decade in particular when the proportion of women faculty will remain much less than the proportion of women students, that the University endeavor to increase the presence of women scholars on the campus by encouraging the appointment of women as visiting professors, by sponsoring such things as a lecture series involving women scholars from all fields, or a series of weekend seminars through the Sarah Doyle Center involving women whose work is related to some aspect of Women's Studies.

VI. Upon the Number of Women in Administrative Positions

The Pembroke Study Committee recommended that upon the merger of Brown and Pembroke, women should fill positions at all levels of the administration; that some of these women should be concerned with the particular needs of women students; and that at least one women be appointed to a high-level administrative position such as Associate Provostship.

It is difficult to compare in any meaningful way the numbers of women in important administrative positions before and after merger. Just as certain student leadership positions for women disappeared with the merger, so a number of important administrative positions at Pembroke were abolished when Pembroke merged with The College. What we feel is important, however, is that, as was recommended in the Pembroke Study Committee report, women play a role at every level of Brown administration and that the special needs of women be given consideration within the present coeducational framework. Recent appointments, such as those of Beverly Ledbetter as University Counsel, Sallie Riggs as Assistant Vice President for University Relations, and Harriet Sheridan as Dean of The College, suggest that Brown is taking very positive steps to ensure the full participation of women with the University's administration.

RECOMMENDATION: That Brown continue its efforts to include women at every administrative level.

VII. Upon Alumnae/i Perceptions of Brown

The alumni/ae survey indicates that an overwhelming majority of men and women in the classes sampled felt that the merger had either not affected or had improved the educational experience available at Brown, the social life, residential life, preparation for family life, career opportunities for men and women, and so forth. These findings suggest that, although there may be lingering pockets of resistance, the majority of alumnae/i view the merger as producing favorable outcomes for both men and women.

Summary of Part One

As a direct result of the merger, the University has steadily increased the percentage of women in each entering class so that the student body now is approximately half male and half female. The sex composition of Brown appears to be a major source of satisfaction among the students and should be maintained for the foreseeable future. While considerable progress has been made in increasing the number of women faculty, for some years to come the University must seek in every way possible to increase the presence of women on the faculty and in University Hall. The merger appears to have had little effect upon the quality of students admitted as measured by the criteria of SAT scores and class standing. Throughout the period Brown has continued to be attractive to excellent applicants, and the coeducational status of Brown seems to be one factor in the institution's appeal. Alumni/ae seem by and large to perceive the merger favorably. One result of the merger with a potentially adverse effect for women, however, has been the decrease in women students in leadership roles on the campus, and steps should be taken to ensure that women have special opportunities for developing leadership skills.

PART TWO: AN ASSESSMENT OF HOW COEDUCATION IS SERVING BROWN WOMEN TODAY

The following analyses focus on three aspects of the undergraduate experience: intellectual growth, the formulation of career goals, and the development of attitudes, values and interpersonal relations. In looking at these three broad areas of undergraduate life, we were attempting to determine differences between the needs and experiences of men and women in order to see if Brown offers equal opportunities for growth to both sexes. In many matters, our study pointed up problems without providing easy solutions for them. In some instances the Corporation Committee has specific recommendations to propose; in other cases we wish to refer the problem for further study to appropriate faculty, administration or student groups. In addition, it should be noted that most of our data reflect student perceptions of the institution and how it affects their lives. Unfortunately, we have no systematic evaluation of faculty and administration perceptions of the University and students. The Committee, therefore, attempted to take into consideration the limitations inherent in student responses without at all discounting their importance as one indicator of how well Brown is serving student needs.

I. The Academic Growth and Development of Men and Women at Brown

First and foremost one thinks of Brown as a place which fosters the intellectual growth of its students. External indicators such as Brown's record in placing students in graduate and professional schools suggest that Brown does a good job in general of graduating seniors who are regarded as intellectually capable and mature. The self-perceptions of students corroborate such external indicators. Asked whether they felt their Brown experience had improved their ability to do such things as write well, evaluate options, organize and present ideas, acquire new skills and understanding on on their own, formulate creative and original ideas, etc., an overwhelming majority of both Brown men and women answered affirmatively, with the percentage answering in the affirmative increasing steadily from freshmen to seniors. Similarly, when asked to evaluate the helpfulness, competence, and accessibility of the faculty, both men and women students gave the Brown faculty high ratings. In general, Brown students of both sexes seem to flourish academically and to show a great deal of satisfaction with their intellectual lives. There are, however, some important differences between the experiences and perceptions of men and women which raise questions about the degree of applicability of this positive picture and which deserve careful consideration.

A. Women at Brown and at the Other Schools in the Study Are Still Less Confident Than Men in the Use of Quantitative Skills.

41% of women, as opposed to 58% of Brown men, answered yes when asked if Brown had increased their ability to use quantitative tools. Moreover, the alumni survey revealed that for the years 1961, 1967, and 1974, men steadily reported increases in their ability to use quantitative skills (44%, 58%, and 65%), while women in general did not (37%, 36%, and 40%). Therefore, the gap in confidence in regard to this area seems to have widened, not narrowed, in recent years. Women may simply be coming to Brown with fewer years of high school math than men, a possibility which might explain the decline of women's math SAT scores relative to men after 1968 (see graph 4) and which would make women less prepared than men to do college work requiring mathematical skills. Women also may deliberately be choosing courses in which quantitative skills are not required, thus avoiding what they have been socialized to fear. Clearly we feel that it is not the University's job to require that all women take math, statistics or computer courses; however, especially considering the increasing number of fields in which quantitative skills play a major role, it seems desirable to encourage interested women to develop their mathematical talents and to help them overcome any assumptions they may have about their incompetence in these areas.

B. Though Women Receive Higher Grades in High School Than Men and Though They Report That They "Apply" Themselves More Diligently Than Do Men At Brown, A Smaller Portion of Women Than Men Receive A's in College Courses.

Table 2 shows, for the six schools in the study, that women's grades drop more drastically than do men's once they arrive at college. Especially strong grade differentials open up between men and women in bio/medical science, physical sciences, and engineering, but the differences in all academic fields are statistically significant. At the same time, women consistently report more diligence in such matters as preparing class assignments in advance, taking careful notes, and such. If, as is often asserted, men mature more slowly than women, that might explain why the percentage of men receiving A's in college might more nearly equal the percentage of women receiving A's than was true in high school. It would not explain why men should move ahead of women in this regard.

C. In a Related Finding, Women at Brown in All Four Classes Surveyed Felt Less Self-Confident Than Men Concerning Their Preparedness for Graduate School.

Averaging the four classes surveyed, 62% of the men and only 48% of the women felt that their Brown experience had increased their sense of being well-prepared for graduate work.

Taken together, the above findings suggest that, in general, women enter Brown with a higher achievement level than men and exit with a lower achievement level. At the same time, they do not register gains in intellectual self-confidence to the same degree as do men. Freshmen year, in particular, seems to be a disorienting and disheartening experience for women students in academic matters. Their grades drop off sharply from high school, and in that year there occurs the greatest gap between men and women students' perceptions of their academic ability. Such a traumatic beginning may well lower academic expectations permanently. More women than men report plans to defer graduate study or to pursue Masters work rather than the Ph.D.

The question, of course, is why these sex differentials appear during college. Women come to Brown with high aptitude and high achievement and report continuing academic diligence. Do they not possess certain skills or attitudes which would enable them to succeed at college-level work to the same degree both absolutely and in relation to men as they did in high school? Or are there factors in the college environment which either cause women's achievement to be undervalued or which fail to provide the setting in which women's academic potential is most fully realized?

Unfortunately, the Corporation Committee cannot with any certainty identify the exact causes of the two adverse phenomena described above in regard to women's academic self-confidence and their grades. What follows are some possible pieces of an answer, each wanting further study.

1. First, by examining the academic experiences of women who do express strong gains in self-confidence concerning graduate school preparedness, we hoped to be able to determine what positive factors in the college environment helped to foster such increased self-confidence. For example, for both men

and women, there was a very strong correlation between having independent study courses or having off-campus internships and feelings of self-confidence in academic matters. For women only, however, was there an extremely high correlation between academic confidence and (a) having valuable, i.e., more than casual, discussions with professors; (b) having faculty who taught some important skills of a practical nature; (c) having the opportunity to gain leadership experience; and (d) having the opportunity to acquire new skills on one's own. Further, throughout the survey, women students consistently reported more faculty contacts of both a social and an academic nature than did men.

Tentatively, the above information suggests that women seek and may feel a need for more direct faculty contact and support than do men. Secondly, it appears that women, more than men, receive special benefit from the opportunity to acquire skills which allow them to feel some degree of practical mastery, whether it be the mastery of leadership skills or of skills taught in the classroom. In this regard, one important finding of the study was that while women generally report greater faculty contact than men, one important exception to this pattern exists. Men students are more likely to work with faculty members as laboratory, research and teaching assistants than are women. These findings may suggest that while women are more active than men in initiating contacts with faculty, faculty-initiated contacts are more likely to be directed toward men than women. Women are thus denied both the practical and the career-oriented attention from faculty which is important in encouraing both male and female students to enter graduate school. It may be, of course, that there are simply fewer women in fields requiring faculty, lab or research assistants. In any case, it is a matter requiring further investigation.

2. Secondly, the study revealed that there are strong correlations between sex composition of classes and feelings of academic self-confidence. For example, expressions of self-confidence are significantly higher than average when the female student reports having had one, two, three or more courses with no men enrolled or even when she has had one or two courses with predominantly female enrollment. Constantina Safilios-Rothschild, in her speech to the conference which concluded our study, supported this finding by reporting that her research has led her to conclude that when women comprise a very small portion of a learning group, the women learn less than if they comprise at least one-third of the group. (She added that her findings do not apply just to women, but to any group which in a given context comprises a distinct minority within a larger learning group.) These findings may help to explain the lower grades for women in the bio/medical field, the physical sciences, and in engineering -- areas in which the percentage of women students is comparatively low. Since grading patterns are not uniform across the University -- that is, some departments typically assign higher or lower grades than do other departments -- it would be useful in further study if the grades received by students could be broken down by departments as well as by sex, so that one could see just how great a differential exists between men's and women's grades in given fields.

3. Third, a much greater percentage of women than men reported sexually biased behavior by faculty and by opposite sex peers (see table 3). Even allowing for a degree of paranoia on the part of some women, one must entertain the possibility that there is some unconscious sexism on the part of the predominanatly male faculty at Brown which may surface in fairly minor ways or which may extend to judgments concerning academic competence. Again, it is

important to remember that we have no data relating to faculty perceptions of this problem. It may be important to note, however, that women at single-sex schools report every type of biased behavior less frequently than do women at coed schools. This may be due to the fact that a greater percentage of the faculty is female at these schools.

Summary

In regard to academic matters, both men and women undergraduates report that their Brown experience has led to increased intellectual competence in a number of important areas. The study disturbingly reveals, however, that both in terms of acquiring academic self-confidence and in obtaining high grades, the majority of Brown women lag behind Brown men. The reasons for these gaps are ambiguous, but possible causes may include sex bias on the part of the faculty; lack of opportunity in some fields for women to have frequent and academically relevant faculty interaction; lack of opportunity to have access to positions such as faculty research and lab assistant; lack of opportunity in some fields to participate in classes in which women are present in large numbers.

RECOMMENDATIONS:

1. That the matter of women's lower academic self-confidence and achievement, as measured by the precipitous drop in grades between high school and college, be referred for further study to an appropriate university forum.

2. That, in the meantime, steps be taken to ensure that "apprenticeship positions" such as lab, teaching and research assistantships are being given to women in proportion to their availability within the pool from which such assistantships are chosen. Implementation of this recommendation will require that availability pools for such positions be established and broken down by sex.

3. That, particularly for women in fields in which men predominate, faculty be sensitized to the special needs of women students when they constitute a small proportion of a particular learning group and opportunities be cultivated for all-female study groups, GISPs and such.

4. That a genuine effort be made to probe the issue of unconscious sex bias in the classroom. One approach might be, for example, to invite a scholar such as Constantina Safilios-Rothschild to address the university community on this topic and to print her speech in the Weekly Bulletin. Consideration might be given also to finding a means, through faculty interviews or a questionnaire administered by a competent outsider, to explore further faculty attitudes toward women as academic and professional achievers.

5. That special attention be given to academic support and counseling for women during the freshmen year, with particular emphasis upon having women faculty, administrators and students accessible for such counseling.

6. That the University make special efforts to encourage women to develop their quantitative skills and to overcome past mathematical inadequacies and the anxiety with which women often approach the use of quantitative tools.

II. The Career Development of Men and Women at Brown

There is no doubt that during their four years at Brown students are developing attitudes and making choices which influence and frequently determine their futures and, in particular, their career plans. To the extent students are unaware of the signficance of their academic decisions on their careers or are not educated or motivated as to the occupational opportunities available to them, the University may be failing in one of its most important responsibilities and goals: to assist its uniquely talented and educated students to sort out their abilities and interests and ultimately to find satisfying ways of using their education to contribute to society and to their own fulfillment, or, as the Charter reads:

"Preserving in the Community a succession of individuals duly qualify'd for discharging the Offices of Life with usefulness and reputation."

Especially in regard to women students, the University faces a special challenge. Most Brown University women plan full time careers (68%) or part time careers (26%), and most plan to be married (77%) and to have or to adopt children (69.5%). The alumni/ae study supports the notion that women graduates are increasingly working at full time jobs. In the class of 1961, 14% of the women surveyed are working full time; 35% of the class of 1967, and 43% of the class of 1974, and some of that class is still in graduate school and clearly intends to enter the work force later. What is the University doing to help these women prepare for careers and for the complex task of combining work and family?

The study produced several interesting findings regarding the relationship between selection of a major and choice of career, factors which influence Brown students' choices of career, the perceptions of Brown students regarding the helpfulness of the University in career selection, and the attitude of Brown students towards full time careers for women. These findings have important implications for Brown's development of a policy regarding the University's involvement in the career and occupational planning of its students.

A. Not Surprisingly, There Is a Significant Relationship Between Selection of Some Majors and Certain Career Choices

In summary, those selecting the majors listed below consistently show preference for careers in the areas indicated:

Major	Careers
History/Civics	Accounting/Management, Law, Allied Health, Social/Behavioral Sciences
Physical Sciences	Medicine

Major	Careers
Biology/Medicine	Medicine, Natural Sciences
Arts	Arts/Media
English/Language	Arts/Media, Elementary/Secondary Education
Engineering/Math	Freshmen and Juniors selected Law; Sophomores and Seniors showed no strong career preference

In general, women tend to select majors in the humanities and arts more than do men, who tend toward majors in the social and natural sciences. The career preferences of men and women vary accordingly:

Career Choices in Percentages

Career Field	Women	Men
Accounting/Management	13	16
Law	12	15
Medicine	10	16
Engineering/Computer Science	3	9
Natural Science	8	9
Arts/Media	13	8
Allied Health	7	2
Social Behavioral Science	4	2
College/University Teaching	4	3
Elementary/Secondary Education	4	2

These findings indicate that to a certain extent traditional divisions still exist between the majors and consequently the careers selected by men and by women. The question, of course, is (1) whether when students select a major, they are aware of the implications of such selection on their career options, (2) whether students are adequately counseled as to major selection in time to explore their talents and interests in a number of areas before making a choice, and (3) whether students are encouraged to explore their interests and talents in areas traditionally dominated by the opposite sex and receive adequate University support when they make that attempt?

B. Students Desire More Help From the University in Making Career Plans Than the University Is Providing.

While families were reported as being most influential on students' career decisions, professors were next most influential. Although professors, however, reportedly interested students in particular fields, few students found help from professors in career decisions or planning. Many students wanted more career planning help from professors (57%), more accessible career information (40%), greater contact with alumni (50%), internships (68%), and courses with better career objectives (38%). Women expressed more need for such assistance than men. At the same time, the existing counseling services on campus are not presently seen as being helpful to students. 41% of Brown men and 42% of Brown women had no experience with University-wide career counseling offices. Only 2% of Brown men and 5% of Brown women who had experience with such offices rated them "very helpful"; whereas, 20% of Brown men and 17% of Brown women rated them "not at all helpful" in making career or educational decisions.

These findings imply that, for whatever reason, the career counseling office is not presently satisfying the needs of both men and women students for help in making occupational choices and plans. It is not clear whether the services of career counselors are not being well advertised, whether the career planning information and programs supplied by the University are inadequate, or whether there are simply better ways of providing career guidance and opportunities than through traditional career planning offices. Should, for example, Brown foster faculty involvement in career planning? Are professors willing to be informed about and counsel with students concerning career opportunities in their fields? Should students be required to select one or more persons from among the faculty to consult with regularly about career plans and steps being taken by the student to discover possible career interests and implement goals set? There also remains the question of internships and the extent to which the University should develop internship opportunities for students on or off campus. In this regard it should be recalled that there is a high positive correlation between academic self-confidence and participation in internships in addition to their possible usefulness in career planning.

C. A Probably Unacknowledged Conflict Exists between the Career and Family Goals of Many Women at Brown.

90% of Brown men and 86% of Brown women believe women should not work at all or work only part-time during the infancy of their children; 83% of Brown men and 74% of Brown women believe women should not work at all or only part-time when children are two to five years old. When children are six to twelve, the percentages drop to 58% for men and 38% for women. At the same time, 68% of Brown women expressed a desire to have a full-time career 10 to 15 years from now, and 41% of Brown men expressed a preference to have their spouses employed full-time 10 to 15 years from now. It is clear, however, that attitudes towards mothers working while children are young would virtually eliminate women who want to be mothers from developing a career during the most likely and crucial years for doing so.

The implications of these findings are complex. Above all, they suggest that both women and men need some help during the college years in making realistic and informed decisions about combining family and careers. Are students made generally aware, for example, of the probable consequences to a career of dropping out of the job market for 7 to 10 years? Are students educated as to the options available to women desiring both a career and family and the means of satisfying both desires? Are women at Brown receiving adequate support in defining their personal and career goals and in developing realistic plans for achieving these goals? The student interviews suggest a surprising naivete about actually achieving the complicated future agendas which most Brown women set themselves. When asked about their plans in ten years, most claimed to be aiming for full-time careers and expected to have several children. When asked if they foresaw any obstacles to attaining these goals, almost none articulated any awareness of the complexity of combining genuine career success with parenthood.

Summary

College years are undoubtedly a critical time for the development of lifetime attitudes and goals. Attitudes formed and decisions made by students during that period, when they are generally removed from the regular influence and advice of parents, greatly affect, if not determine the direction of their entire lives. Yet our data indicate that both men and women students express a desire for greater help from the University in making career plans, especially in terms of faculty involvement. Too, while women are placing emphasis on full-time careers in greater numbers than before, neither they nor the Brown men who are likely to become spouses of college educated women with similar goals show a sophisticated awareness of the compromises and the effort required to pursue both careers and parenthood. Certainly, there is a need for greater University awareness of and participation in career planning of students, particularly for women who have not traditionally been encouraged by society to pursue the best opportunities that are available to individuals with their talents and education.

RECOMMENDATIONS:

1. That the University undertake an evaluation of its career planning services in order (1) to determine exactly what kinds of career guidance and motivation is being given to students by professors, deans, the career development office, student resource center, and others and (2) to make specific recommendations concerning improving the range and type of career information and support. In particular, there should be some attempt made to consult with faculty about the possibility of career advising becoming an integral part of faculty advising. Perhaps this matter could best be referred to the University Board of Academic Advisors.

2. That consideration be given to providing a proper forum in which to discuss the issue of integrating careers and family. Non-credit seminars might be one way to address the issue.

3. That the University institute a systematic method for determining what happens to Brown graduates in terms of careers.

III. The Development of Attitudes, Values, and Interpersonal Relations of Men and Women at Brown.

The final area covered by our study involved what we loosely may call the development of values, attitudes, self-image, and interpersonal skills. College certainly is a time when many things happen to students besides growth of intellectual skills and the choice of a career. Students also, we hope, make strides in attaining emotional maturity and in evolving a strong value system and the capacity for successful relations with others. While we believe it is not the business of the University to inculcate specific values nor to mold the personalities of its undergraduates in certain directions, nonetheless the University does bear the responsibility for creating a supportive environment in which students can develop positive self-images and in which they can find help in identifying and resolving the many problems attendant upon the passage to adulthood.

Our study told us a good deal about what traits characterize Brown men and women today and how college affects their personal and interpersonal development. Some findings of the study were predictable -- for example, that in the classes studied, seniors were more politically liberal than were freshmen. Some findings were reassuring about institutional choices already made. For example, 41.5% of men and 34.5% of women reported that living in a coeducational dorm makes it much easier to have an active social life, and 55.5% of men and 55% of women reported that living in such a dorm makes it easier to have friends of the opposite sex. Clearly these types of residence halls are satisfying certain needs which many students have. We also learned that Brown women have liberal views about premarital sexuality, more so, for example, than their counterparts at single-sex schools. By senior year, only 14% of the women and 12% of the men at Brown reported not having had a sexual experience. This finding indicates once more the need for gynecological services available on campus and for frank and open discussion of contraception and venereal disease from freshman week onward.

What is of real importance to this study, however, is evidence of problem areas or areas in which men and women report significant differences. Below are some of the major areas which we feel are worth further investigation.

A. In Many Regards, the Self-Image of Brown Women is Lower Than the Self-Image of Brown Men.

We have already commented upon the fact that women report lower levels of academic self-confidence than do men, but there are many other areas in which women report significantly lower self-ratings than do their male peers. The following percentages denote the number of women and men who rated themselves as being among the top 10% when compared with average college students in regard to the areas indicated:

	Men	Women
Academic Ability	43%	30%
Assertiveness	16%	15%
Competitiveness	19.5%	10%
Leadership Ability	24%	21%
Originality	25.5%	19%
Intellectual Self-Confidence	32%	20%
Mathematical Ability	15%	3%
Social Self-Confidence	16%	15%
Popularity with Same Sex	9%	13%
Popularity with Opposite Sex	10%	13%
Sensitivity to Criticism	16%	23%
Understanding of Others	34%	51%

At the same time women reported only slight differences from men in their desire to achieve (31% versus 32%); although it is important to note that when analyzed by classes, women's drive to achieve appears to decrease during the college years, while men's drive to achieve increases. (These findings are tentative since we were not conducting a longitudinal study.) Apparently, women lack self-confidence in the specific abilities which make a high level of achievement possible. In regard to social self-confidence, 16% of men and 15% of women rated themselves in the top 10% of students. Women rated themselves slightly higher than men in feeling popular with their own sex

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(13% versus 10%), but only in being sensitive to criticism and in the ability to understand others were women's self-ratings overwhelmingly higher than men's (23% vs. 16%, and 51% vs. 34%). This confirms the picture which developed throughout the study of women feeling relatively comfortable about social and interpersonal matters, but much less confident than men in regard to academic ability, mathematical skills, originality, and ability to compete. On the other hand, men report worrying more than women do about interpersonal relationships, and both men and women students perceive men as emotionally less mature than women.

B. To Some Extent the Double Standard Still Seems To Exist.

When asked if sexuality is an important part of their lives, 80% of the Brown men and 81% of the Brown women said yes. Yet significantly more women than men restrict their sexual relations with others while in a primary sexual relationship, feel that people should know one another really well before becoming sexually involved, feel that one should not be pressured to have a sexual relationship, and feel that couples should live together before marriage. Overwhelmingly, women assume the responsibility for contraception. More than women, men seem to view premarital sex with some casualness. Women, by contrast, see premarital sexual relationships as the product of a close relationship, often involving monogamy, and providing testing grounds for an eventual marriage. Once married, however, men expect more traditional behavior concerning the wife's role in child rearing than do the women themselves (see above, pp. 272 and 273).

C. While Women Report Experiencing Sexism from Both Faculty and Peers, The Sexism from Peers Is Greater Than from Faculty.

More than half of the women sampled (52%) had been made to feel uncomfortable by a sexist joke told by a peer of the opposite sex; 55% had

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experienced an intellectual "put down" by a peer of the opposite sex (29% of the men had experienced the same from women). In the interviews, men themselves seemed often to be aware of deep-seated chauvinistic attitudes on the part of their male peers. As one male engineering major of the class of 1978 said: "I think there is a lot of -- no matter what people say -- a lot of carry over chauvinism. I think our generation is -- we're going to have to be the ones that have to finally have our children totally made unsexist. I think because we just can't erase what our parents taught us when we were little kids. It takes a long time to get rid of it. I know that no matter what people say, there's still a noticeable sort of feeling among people -- I'm not saying that men in general are sexist. I think that's not true. But I do think that when you get down to people's base reactions, that I'd say probably a sizable minority of the men here would -- there are certain things that they would just have a reaction to that I would say is a sexist sort of reaction. . . I guess it just comes down to when you hear people making remarks on campus. Sometimes just talking to people, and somebody will just come out with some sort of sexist remark. People are not as liberated as they seem. And when people make a conscious effort -- or when someone asks them a point blank question, they usually say what they consciously feel. But a lot of times people subconsciously just say things that . . . . A lot of remarks are sexual innuendos. A few people have said things about women being out looking for a husband. In terms of careers . . . But I think that most men when they make sexist remarks, it has to do with sex. I'm not sure why that is. It could be because that's what people think is funny."

We can only applaud the desires of this young man to make his own children "totally unsexist," and we think that the University should give him all the support it can by providing an atmosphere in which problems of sexism are fairly faced. As a footnote, many of our interviews elicited a great number of remarks about racism on campus, an issue which is not the focus of this study, but which clearly emerged as a major campus concern. At this point black women may well be the campus group most vulnerable to discrimination both because of their race and their sex.

Summary

The lives of the college students surveyed are extremely complex. They are attempting many kinds of growth simultaneously. Not every student, of either sex, can be expected to feel a high degree of confidence in his/her abilities in every area. As an institution, however, we need to be sensitive to where obvious trouble spots lie for either men or women. Our study reveals that in general women's self-concept is less positive than men's in regard to many traits connected with academic and professional success. At the same time, men show less confidence than women in their own emotional maturity and ability to understand and be sensitive to others. Too, differences still exist in attitudes toward sexual behavior and the extent to which women should work while children are young. Finally, women students report a fairly significant occurrence of sexist behavior and attitudes on the part of their male peers.

RECOMMENDATIONS:

1. That the University consider ways in which the self-esteem of women students can be enhanced. The implementation of other recommendations made in this report should have a positive effect on women's self-esteem -- namely, an increase in the number of women faculty and administrators, a lecture series for women scholars, leadership training programs, increased attention to the needs of women in fields where women are by tradition poorly represented, and so forth. Other remedies should, however, be considered, such as increased

opportunities for internships with successful women lawyers, businesswomen, and other professionals and increased support for the activities of the Sarah Doyle Center. At the same time, special attention might be given to the problems of men students in developing interpersonal skills and emotional maturity.

2. That the University recognize that, despite the "sexual revolution," men and women still often differ in their perceptions of what behavior is desirable during a premarital sexual relationship and in expectations about how dual careers are to be integrated with future family life. Consequently, that the University, through its counseling and health services, and perhaps through dormitory programs, offer support in identifying and resolving such conflicts.

3. That the University provide some forum for addressing the issue of sexism among students.

CONCLUSION

The merger of Brown and Pembroke seems to have, if anything, enhanced the quality of Brown's student body and its level of satisfaction with the institution. Women in general are thriving within the coeducational arrangements now prevailing at the University. That we discovered some problem areas is undoubtedly less a result of the merger than the result of rapid social change, especially changing expectations about women's personal and career goals. Women are striving in greater numbers for higher goals than ever before, yet some do not possess the confidence, the role models, and occasionally the practical skills to attain their goals without some specific kinds of support. We hope that the University will provide some of that support so that coeducation at Brown can continue to fulfill its promise of the richest possible

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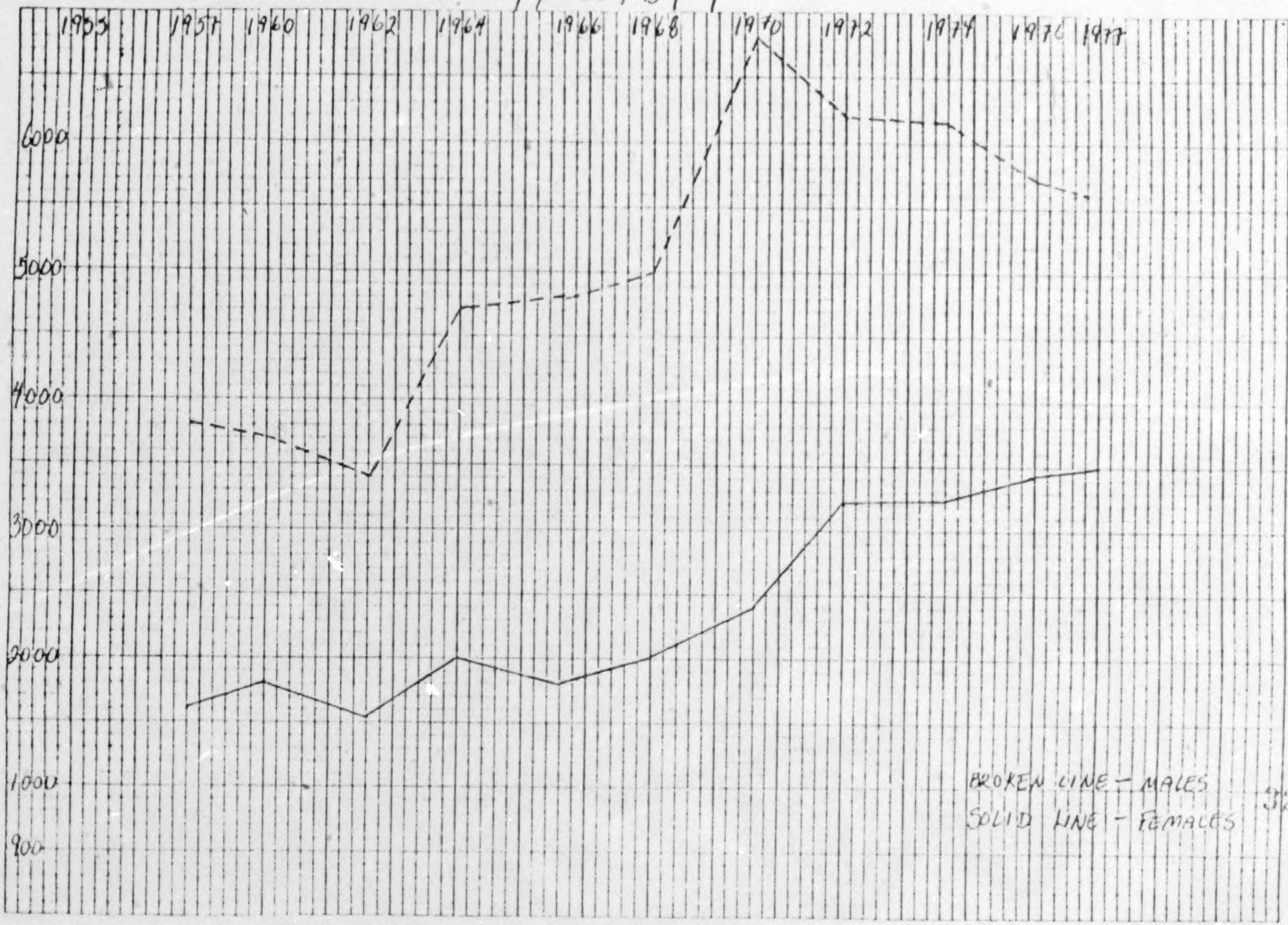
college experience for both men and women. The goal is clearly not separate but equal treatment for women, but rather their full integration into the life of the University.

FINAL RECOMMENDATION:

That the University establish a mechanism for implementation of the recommendations contained in this report and for the continuing oversight of matters pertaining to women on the campus. Further, that the University periodically institute a self-review in regard to the status of women at Brown in order to remain aware of changing needs. Finally, that consideration be given to employing the survey instrument developed for this study for use with successive undergraduate classes so that longitudinal data can be compiled concerning specific classes.

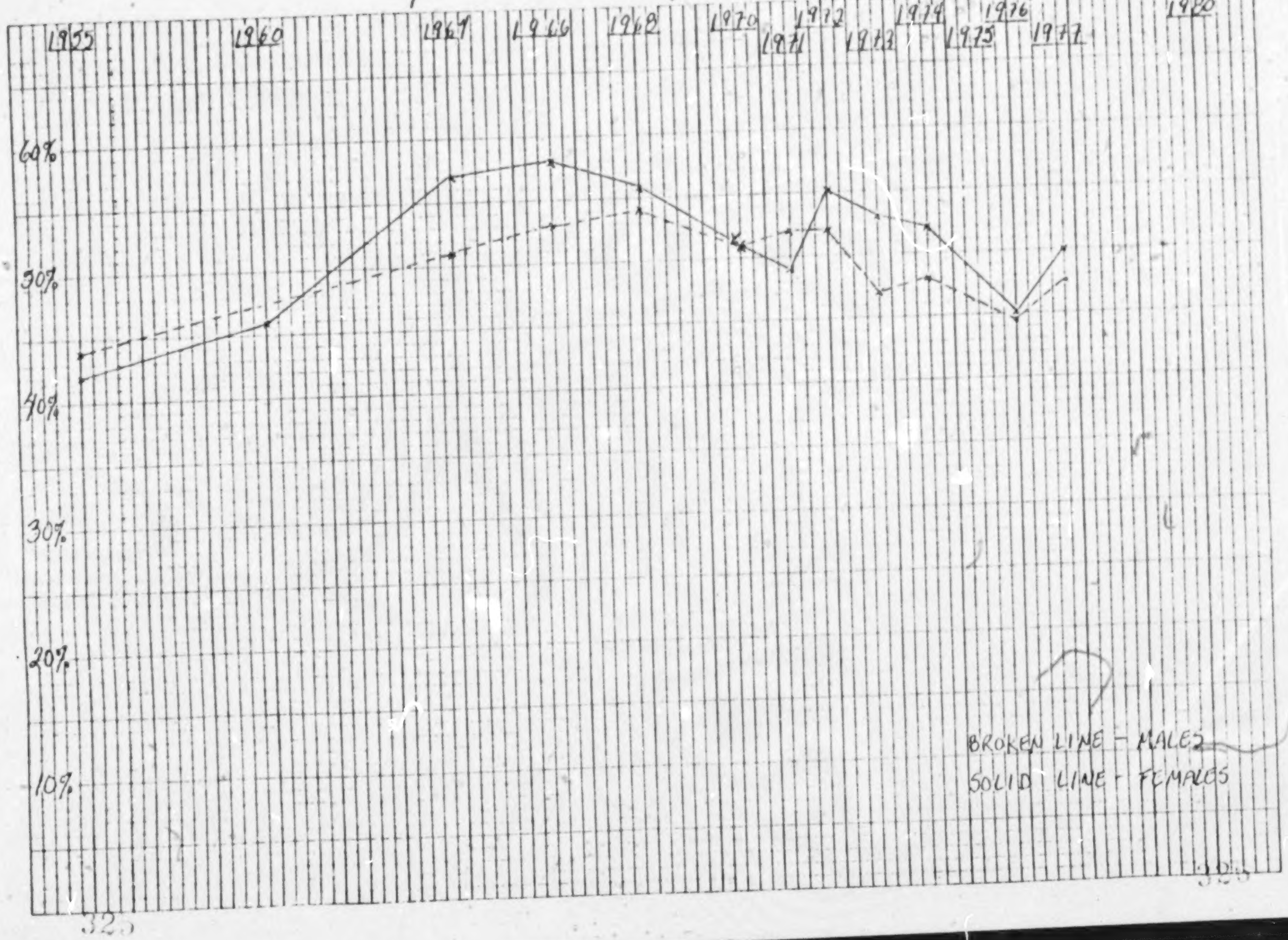
Graph 1

Applied, by year and sex



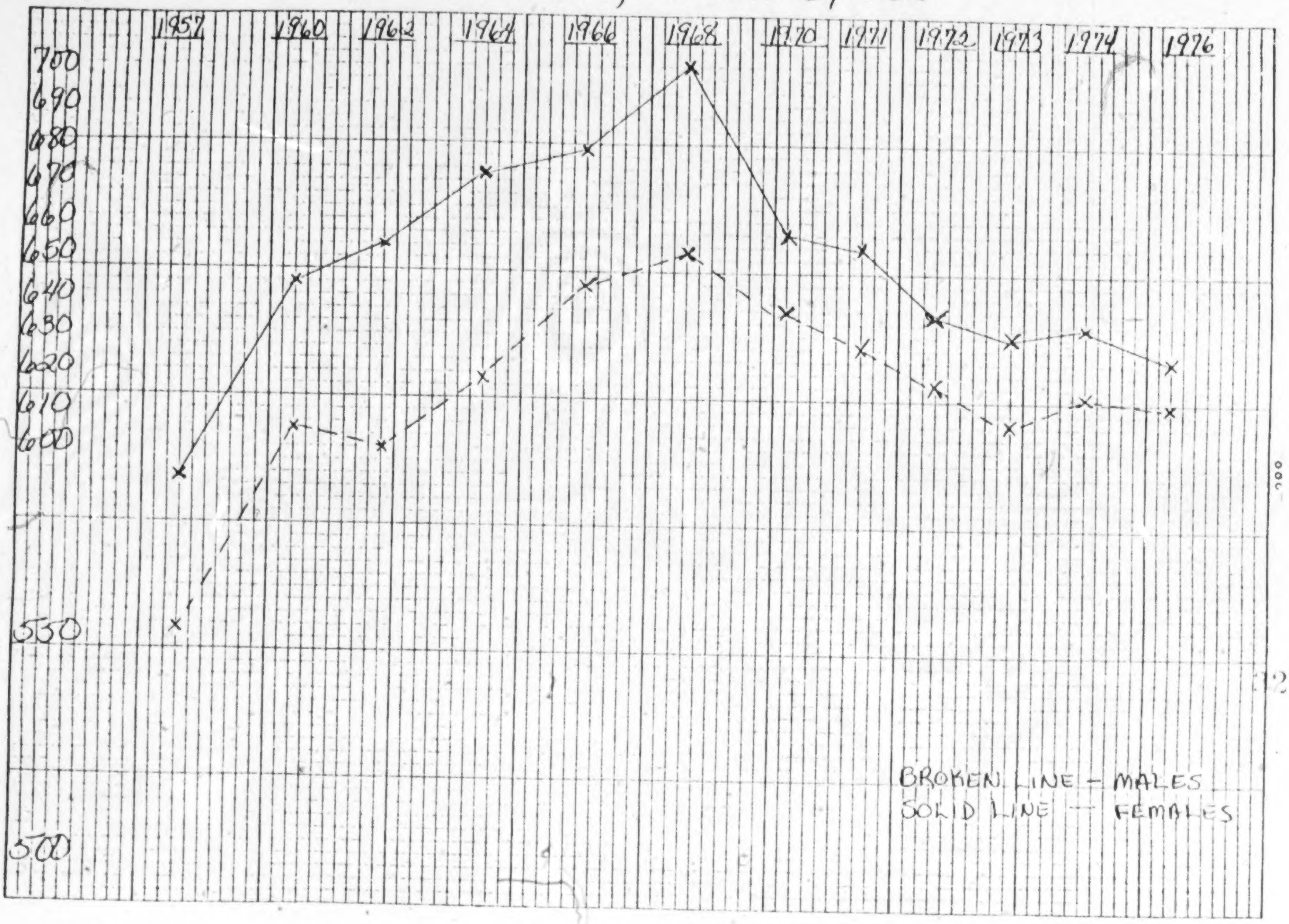
Graph 2

Yield Trends, by Sex



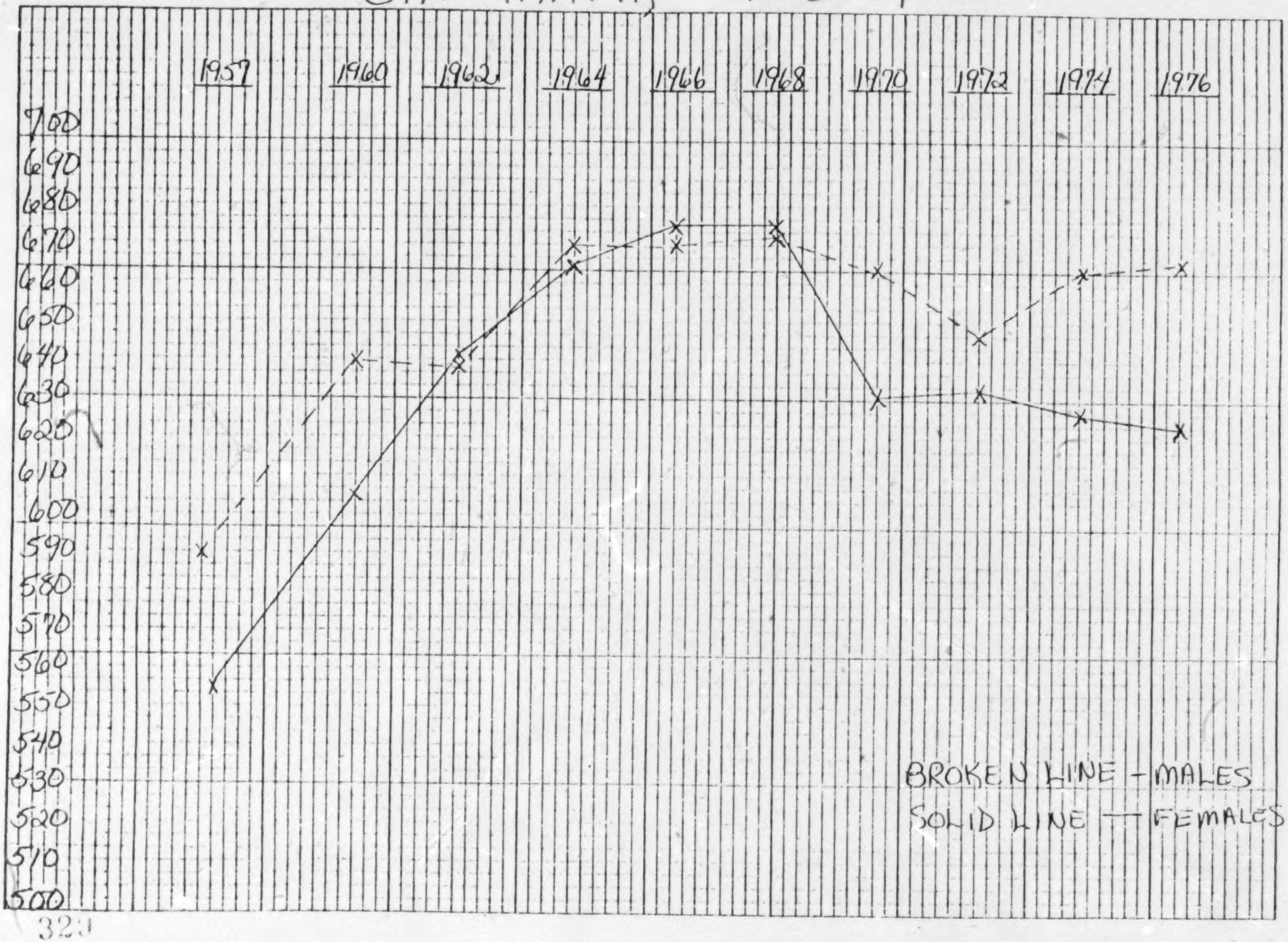
Graph 3

SAT-VERBAL, TRENDS BY SEX



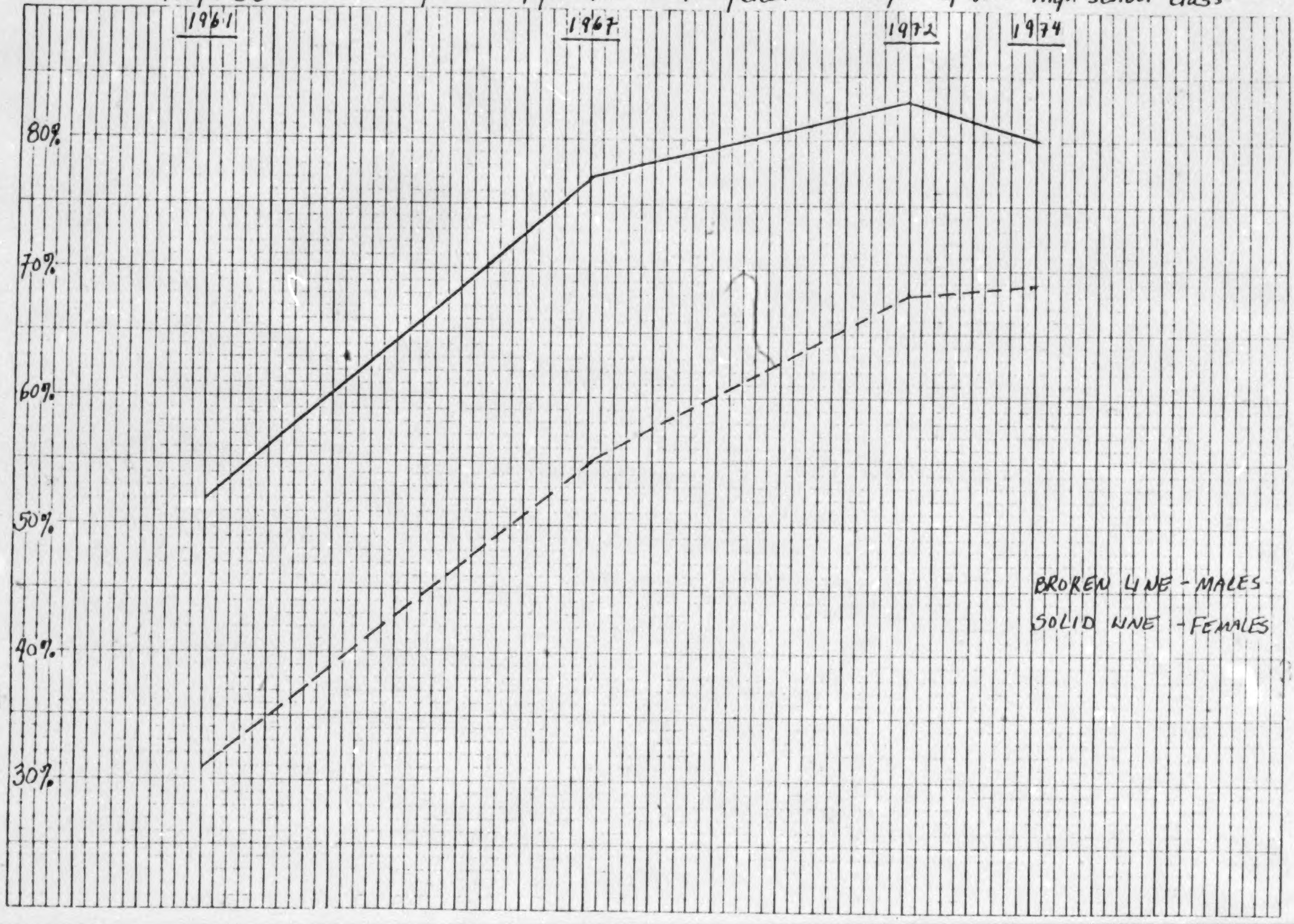
SAT-MATH, TRENDS BY SEX

Graph 4



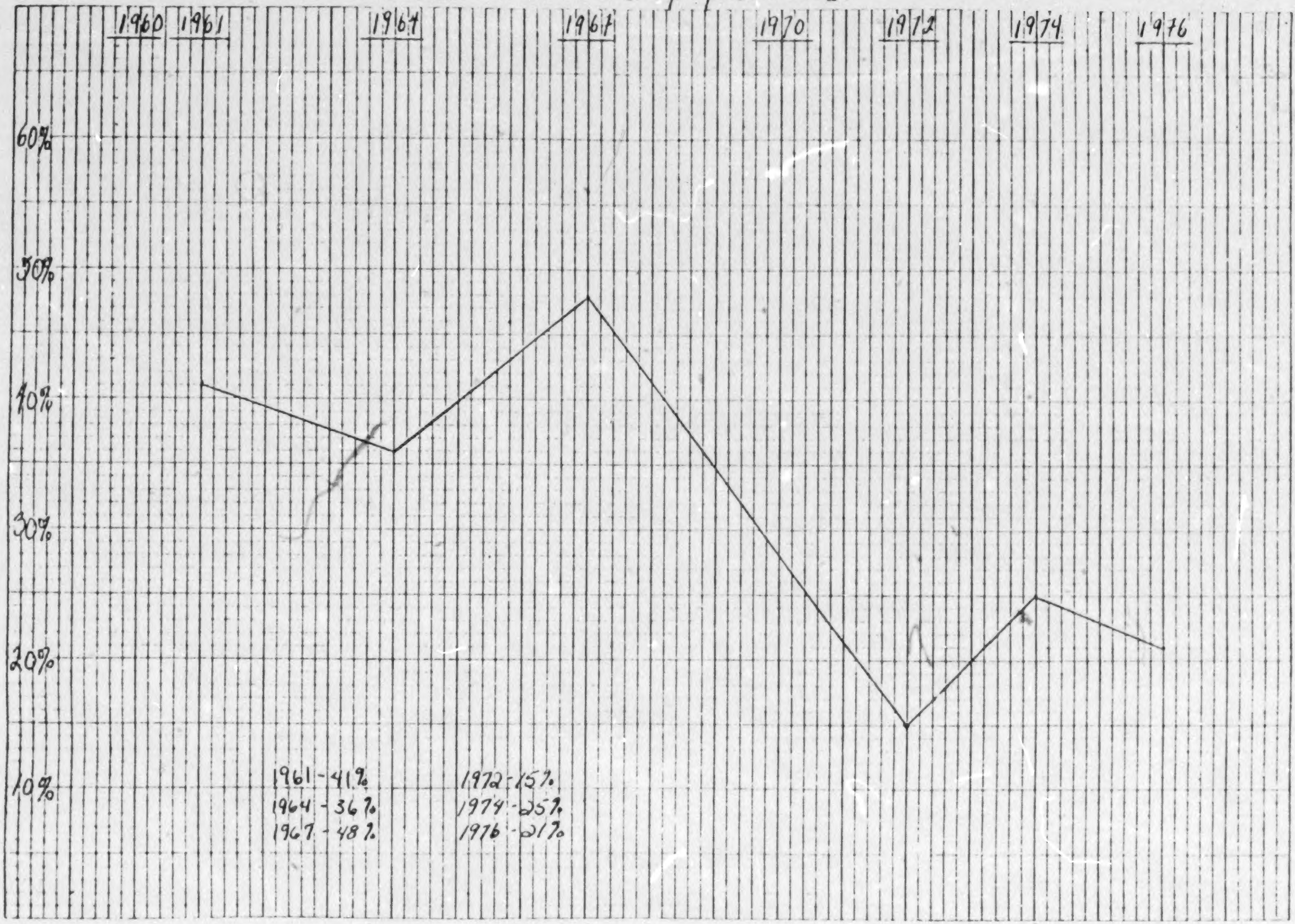
Graph 5

High School Rank - percent of freshmen in 90th percentile or higher of their high school class



Graph 6

Women in leadership positions



APPENDIX TO GRAPH 6

STUDENT LEADERS, 1961-1976

1. Student Government - Top two positions
2. Yearbook - Top position and business manager
3. WBRU - Top position
4. Sock & Buskin - Top position
5. Brown Youth Guidance - Top position
6. University Christian Association - Top position
7. Hillel - Top position
8. Class Officers - President and Treasurer
9. Brown Band - Top position
10. Organization of United African Peoples (OUAP) - Top position
11. Student Newspaper (Brown Daily Herald, Pembroke Record) - Edictor in Chief and Managing Editor

TABLE 1

PERCENTAGE OF REGULAR FACULTY WHICH IS FEMALE

Academic Year	Total	Full Professors	Associate Professors	Assistant Professors
61-62	7.1	0	7.4	9.5
67-68	5.9	2.7	6.9	4.9
70-71	7.0	2.4	6.4	9.3
75-76	10.9	1.8	9.9	29.5
79-80	13.1	2.4	23	28

Table 2

High School and College Grades: Differences by College

	Percentage with A- or better in high school	Percentage with A- or better in college
Women:		
A1	82%	28%
A2	88%	25%
A3	66%	20%
A4	51%	17%
A5	76%	17%
A6	83%	17%
Men:		
A1	71%	33%
A2	81%	31%
A4	45%	21%
A6	75%	19%

TABLE 3

PERCENTAGE OF MALE AND FEMALE STUDENTS PERCEIVING SEXUALLY BIASED BEHAVIOR BY FACULTY AND OPPOSITE SEX PEERS

Behavior	Total Men %	Women Coed %	Women Single-Sex %	Total Women %
Intellectual "put-down" by a professor	4	26	17	23
Sexual joke by a professor	8	26	19	24
Professor's comment on appearance	4	9	7	8
Sexual advance by a professor	2	9	6	7
Intellectual "put-down" by opposite sex peer	25	53	33	46
Sexual joke by opposite sex peer	10	50	27	41
Comment on appearance by opposite sex peer	23	49	26	40
Course readings biased against own sex	4	30	25	28